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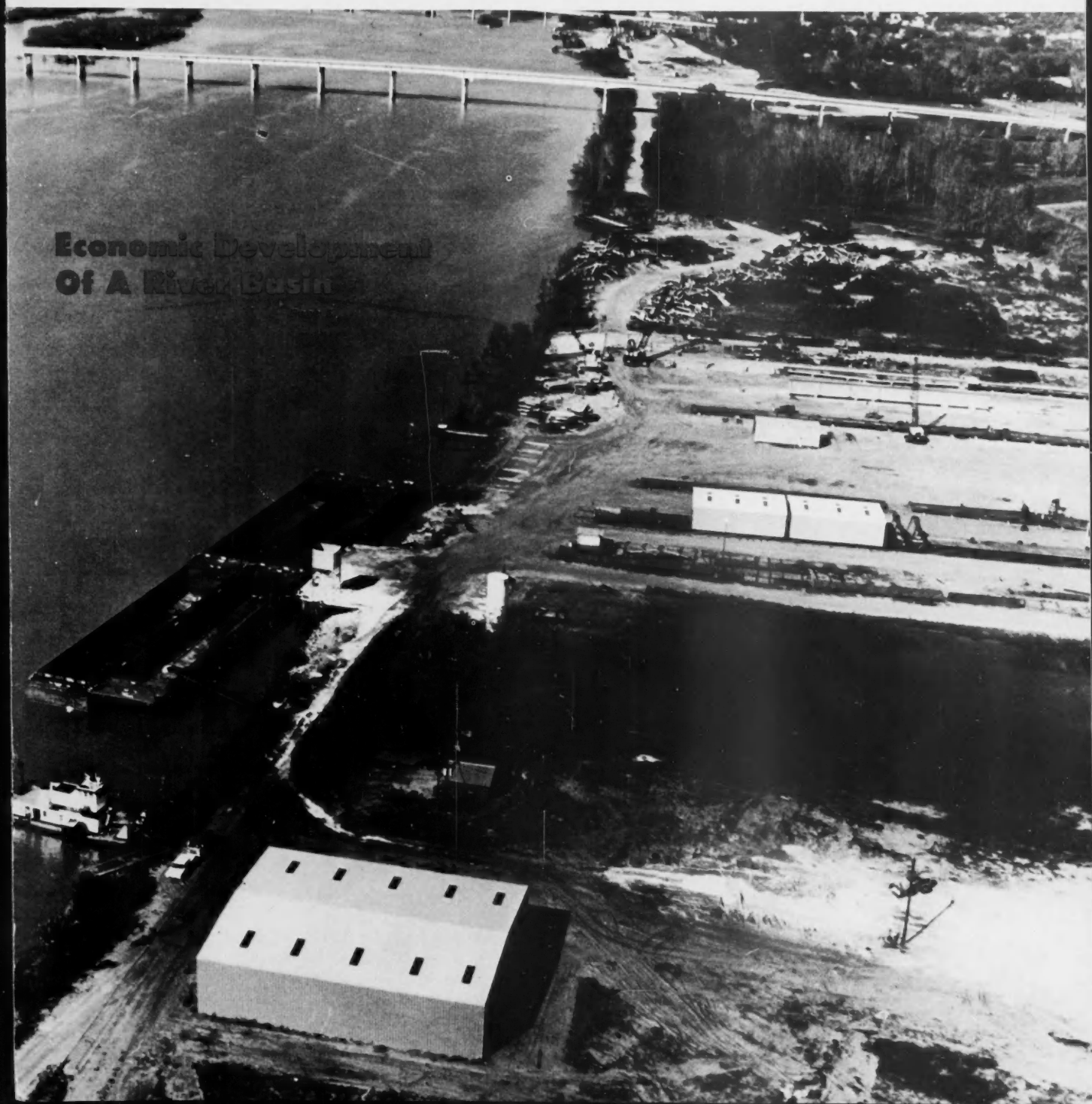
Commerce Today



FROM THE
SECRETARY

Solving The Natural Gas Shortage

Natural gas—our cleanest and most convenient source of energy—is in critically short supply in some areas of the country. Some shutdowns of industrial plants have already occurred and many others are threatened. The jobs of thousands of workers are jeopardized.

Supplies of gas for North Carolina have been curtailed by 45 percent. A fertilizer plant was shutdown for two weeks in January, idling several hundred workers and cutting production of an essential need for growing food. A glass plant was closed for 10 days.

In northwestern Ohio, major industrial firms have received only about half their normal supplies in January. Reduced production schedules and some layoffs have resulted. A large tomato crop grown in greenhouses has been threatened by the curtailments.

In southern New Jersey, glass and petrochemical plants have had supply cutbacks. Emergency supplies from other sections of the state have forestalled plant shutdowns at least temporarily.

Many other states have experienced similar curtailments.

What is causing these shortages?

The root of the problem is federal mismanagement of the resource resulting in price constraint that discourages exploration and the discovery of new gas reserves.

Under a Supreme Court decision in 1954, the Federal Government regulates the price of gas shipped in interstate commerce. The Federal Power Commission is required by law to determine the wellhead price on the basis of cost-of-service rather than economic and market factors. The average price of gas increased only 20 percent between 1961 and 1971, but the cost of drilling a gas well increased 57 percent during this period.

Not only is exploration more expensive, gas is harder to find in the lower 48 states. The average success ratio for exploratory wells was 19.8 percent for the period 1945-1954. It dropped to 16.6 percent for the period 1963-1972. Perhaps even more significant is that the size of the discoveries is getting smaller. In 1945-49, 47.6 percent of the newly-discovered fields contained more than six billion cubic feet; in 1960-64, only 25.2 percent were that large.

The artificially low prices set for gas and the rising cost of discovering new reserves have come at a time when the demand for gas has been increasing rapidly. Its advantages over other fossil fuels include no handling problems or necessity for consumer storage facilities; and the equipment for burning it is generally simple and inexpensive. In addition, many industries began to favor clean-burning gas over coal and oil when air quality control regulations were promulgated during the 1960s. As a result, gas now represents about one-third of the nation's total energy consumption. But we have produced and used twice as much gas as we have found in the lower 48 states during the last six years.

How can we relieve the growing shortage of this clean fuel? How can we encourage firms to make the investments required for the more expensive exploration on the Outer Continental Shelf?

President Ford clearly pointed to the solution in his energy proposals: removal of federal interstate price regulations on new natural gas. It will not only encourage production, it will also help reduce demand.

Once again, we will see the ability of the free market place to allocate resources through the mechanism of supply and demand. It is an unbeatable combination for supplying our wants.

Rogers C. B. Morton

Commerce Today

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COVER: *The McClellan-Kerr Arkansas River Navigation System has provided an area of Arkansas and Oklahoma with waterborne commerce from the mouth of the Mississippi River to Tulsa making possible a skein of seaports and docks along the way. This aerial view is of the Port of Van Buren. Such economic development is giving new life to an area plagued with unemployment.*

ECONOMIC
HIGHLIGHTS

GNP Estimates Confirm Sustained Decline In Nation's Economic Activity During 1974

Economic Highlights is prepared by James L. Pate, Assistant Secretary of Commerce for Economic Affairs.

The preliminary Gross National Product (GNP) figures for the fourth quarter of 1974 provide statistical reinforcement for the dour tone of the President's State of the Union message. Gross National Product, adjusted to remove the influence of inflation, declined 9.1 percent on a seasonally adjusted annual rate basis. At the same time, the implicit price deflator surged upward at a record annual rate of 13.7 percent despite significant improvements in some components. The figures are therefore far from good news, but a detailed examination of them is still necessary to form expectations concerning 1975 prospects.

As shown in chart 1, the most recent decline in real GNP was the fourth consecutive quarterly decrease and even exceeded the embargo-induced drop in the first quarter of the year. There have been two other episodes in the post-war period where real GNP declined for four consecutive quarters—in 1953-54 and again in 1960-61. Neither these nor any other contraction during the period lasted longer than four quarters.

The depressed level of economic activity was evident in most of the major GNP components, but substantial differences were present in the relative severity of the downturn. Housing construction and consumer expenditures for durable goods registered the largest declines. The drop in housing continued the slide which began in the second quarter of 1973 and reduced the level of activity to 41.7 percent below the peak period. The decrease in durable goods expenditures was largely due to the sharp dropoff in the sales of the already depressed auto industry, which alone accounted for about three-fourths of the decline in this component.

A less severe, though still substantial, decline was reported for producers durable equipment. The downward movement was concentrated in transportation equipment, including trucks, cars, and aircraft. It should be remembered that in the GNP accounts *all* trucks are considered producers durable equipment, including those purchased by consumers for such uses as camping vehicles. The decline in truck sales may therefore reflect consumer reticence as well as the reluctance of businessmen to add to or modernize their truck fleets.

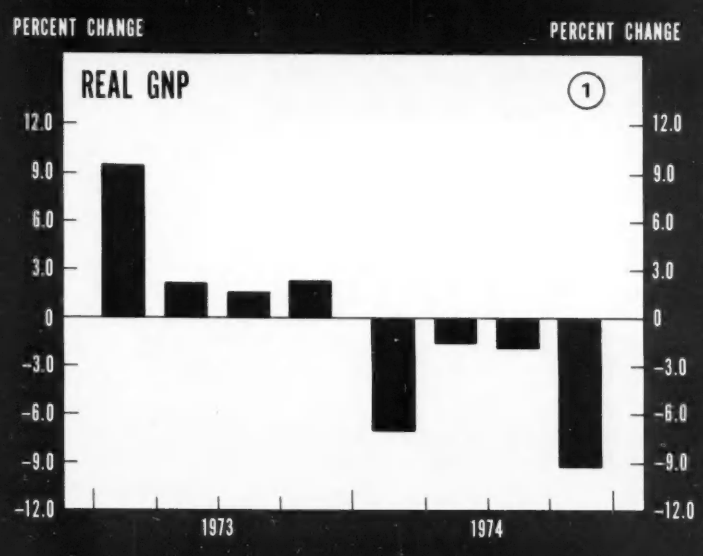
Several explanations of the unexpectedly sharp drop in producers durable equipment spending may be offered. The most obvious is the rapid increase in prices for such items—which rose at a 31.5 percent annual rate during the quarter. Another possibility is that some of the truck sales which might normally have occurred in the fourth quarter were advanced to the third quarter in anticipation of higher prices and costs. Still another possible explanation may be found in the large increase in nonresidential structures expenditures. Many firms, when confronted with rapidly rising capital budgets, tend to cancel or reduce their acquisitions of "shelf items" (e.g., readily available standard items such as trucks) in preference to changing planned "custom" expenditures such as the construction of new buildings.

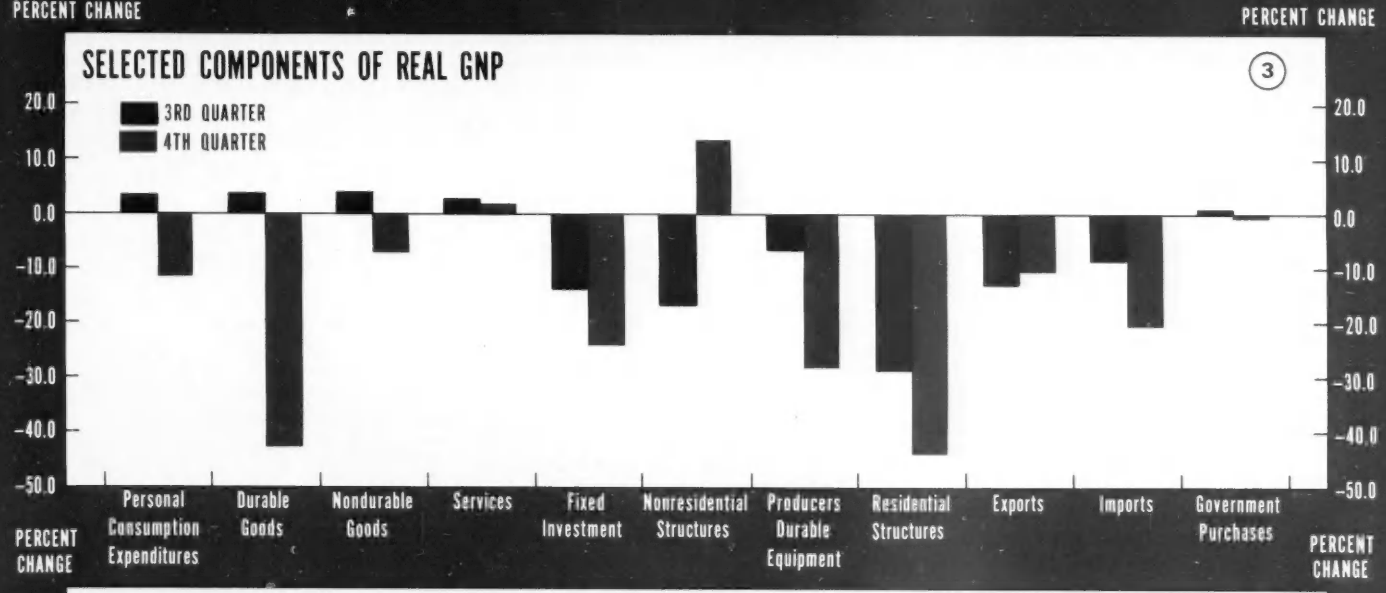
The quarterly changes in the rest of the major GNP components were relatively small. Nondurable goods expenditures declined, chiefly as a consequence of weakness in the purchases of food and clothing. Consumer expenditures for services increased, primarily due to the quarterly increment of the secular expansion in the value of housing services. Net exports also increased, but this change resulted from a larger drop in imports than in exports. Purchases of goods and services by government were virtually unchanged.

Price changes, as measured by the implicit price deflators for the various GNP components, also were generally disappointing and subject to wide variations (chart 4). The overall rate of increase accelerated in the fourth quarter as a consequence of diverse elements, including the federal pay raise, an adverse shift in the GNP "mix" toward items with higher price increases, and the occurrence of certain very large price changes. The largest of the price changes was that noted previously for producers durable equipment. The prices of nonresidential structures, however, also rose more rapidly in the fourth quarter than in the third. Residential structures, on the other hand, turned in one of the most favorable performances of the quarter—an increase at an annual rate of only 5 percent. Nevertheless, the moderation in residential construction prices was not sufficient to prevent a significant increase in the deflator for the general category of fixed investment.

The prices of personal consumption items actually improved somewhat in the fourth quarter. Most of the improvement occurred in durable goods and services, though durable goods remained the personal expenditure component with the poorest price performance. Prices for nondurable goods changed only slightly in the aggregate as a consequence of diverse movements for specific items. Overall, the softness of consumer demand appears to be exerting significant moderating pressures on prices.

As stated at the outset, the fourth-quarter figures provide little in the way of good news. The figures emphasize the economic weakness present at year-end and clearly indicate that 1975 will be a year of challenge. In sum, the fourth-quarter performance does not promise that 1975 will be a bad year, but it does not promise to be an easy year either.





All data are in terms of seasonally adjusted annual rates.

Newsmemo

Savings to U.S. taxpayers are falling out of the sky--when good citizens cooperate. Each day Commerce's National Weather Service sends 300 data measuring devices--radiosondes--into the upper air. When they come floating down by parachute, finders note a labeled mailing sack, and 25 percent are currently being returned to the reconditioning center at Joliet, Ill. At a $12 saving per reconditioned unit, the Weather Service has saved $5 million over 20 years. There's no cash reward, just the finder's satisfaction that she or he has helped the government save both money and energy in the re-use of a manufactured product.

Travel gap narrowed as trade gap widened. While attention is being directed at the 1974 U.S. balance of payment figures, the U.S. Travel Service is projecting that the final 1974 total will show a U.S. travel deficit under the $3 billion mark for the first time since 1971. (The trade total dipped out of the black in 1973 into the red in 1974.) There were 14 million international arrivals in the U.S. last year, resulting in U.S. receipts of $4.75 billion. On the other side of the ledger, 23.9 million Americans left the country and spent $7.7 billion. Higher inflation rates abroad continue to make the U.S. an attractive travel destination.

Benefits and risks of computer-communications are being assessed this week at a conference in Paris. About 300 senior officials from the industrialized nations will seek to identify the issues that face citizens due to the ever-growing sophistication in this field. And by looking at the full range of choices that lie ahead they hope to point toward ultimate solutions. Dr. Betsy Ancker-Johnson, Assistant Secretary of Commerce, will deliver the opening address at the OECD-sponsored meeting.

The talents, products and services available from Kentucky's minority businesses are being showcased by that state. A 214-page catalog will help private and governmental purchasers ascertain an enterprise's size, date of establishment, scope, equipment and number of employees. For a copy of "Minority Purchasing Guide" write the Kentucky Department of Commerce, Office of Minority Business Enterprise, 2329 Capital Plaza Tower, Frankfort, Ky. 40601.

Where are you heading, high school class of 1972? The Research Triangle Institute of North Carolina is following 23,000 graduates into their careers, to help improve future U.S. educational opportunities. The effort began with a 40-page, 160-question form and is being pursued with periodic follow-up questionnaires and personal interviews. The information is fed into six Sycor data processing terminals. So far the Institute has stayed in touch with 94 percent of its large sample group.

A newly-established U.S.-Soviet Fisheries Claims Board has reached agreement on a claim against the Soviets. R & G Fisheries of Tiverton, R.I., will receive $11,400 to pay for lobster traps destroyed by Soviet trawlers moving through a well-marked area off the New England coast in October 1971. The two U.S. officials on the four-man board are from Commerce's National Marine Fisheries Service and the U.S. Coast Guard. The board will hear claims for damages caused by the fishing vessels of either country.

Franchising, a consistent growth area since Commerce started surveying it in 1971, came to a virtual standstill last year. Total number of U.S. franchisers fell slightly to 444,000; while sales rose slightly to $165 billion. The traditional franchisers--auto-truck dealers, gasoline service stations, and soft drink bottlers--were the hardest hit, while the newer types--fast foods, convenience stores, business services, hotels and motels--showed some gains. The number of gas stations fell by 9 percent while the number of fast food outlets went up 10 percent. The survey "Franchising in the U.S. Economy 1973-'75" is now available from the Supt. of Documents, U.S. Govt. Printing Office, Washington, D.C. 20402 at $1.25 per copy.

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Vol. V, No. 9
February 3, 1975

Arkansas River Basin Development Entices Industry, Provides Jobs

The Arkansas River basin in Arkansas and Oklahoma is an outstanding example of how local enterprise, working in partnership with the Federal Government, can enhance the economic development of a high unemployment region, bringing in new industries and expanding old ones, providing jobs, improving community facilities, and building a new outlook and life for local citizens.

The completion by the U.S. Army Corps of Engineers in recent years of the $1.2 billion McClellan-Kerr Arkansas River Navigation System established the basis for a tremendous development that has transformed this vast area from an agricultural to a semi-industrial economy. At the same time it has given the region's agriculture an extensive boost, opening up new domestic and foreign markets for its farm products. Agriculture is still its main industry, although many new industries have moved in.

The waterway has provided the area with waterborne commerce from the mouth of the Mississippi River to Tulsa, Oklahoma, making possible a whole skein of seaports and docks along the way. The navigation system includes 17 locks and dams and canals and contains a channel nine feet deep and 448 miles long. It begins with a channel 300 feet wide that extends from the Mississippi for ten miles up the White River, then follows nine miles of canal to the Arkansas River, thereafter a 250-foot channel for 378 miles up the Arkansas River, and concludes with a 150-foot channel running for more than 50 miles up the Verdigris River to Catoosa, Oklahoma, which is near Tulsa.

The project was authorized by the 1946 River and Harbor Act, signed into law by President Truman. Work on the waterway began in the 1950s.

Commerce's Economic Development Administration (EDA), by grants and loans to communities in the area, has helped them to build water and sewer and sewage disposal systems and a wide range of other facilities. Local funds usually have matched or supplemented the EDA funding. Up to the present, the EDA has authorized more than $30 million to help finance nearly 40 projects in the communities adjacent to the waterway.

The projects have aided the communities in attracting a large variety of new industries, expanding commerce, providing new jobs, and improving the local environment.

Ports have been established in Arkansas at Pine Bluff, Fort Smith, Little Rock, and Russellville-Dardanelle, and in Oklahoma at Muskogee and the Tulsa Port of Catoosa. Other ports are in prospect. In addition, 20 terminal facilities for loading and unloading have been established along the waterway.

In 1970, an EDA technical assistance study recommended that more than 30 other communities along the waterway reserve sites for port facilities.

Tonnage grows

Paul Adams, Executive Director of the Arkansas Waterways Commission at Little Rock, says that in 1969, when navigation along the waterway was provided to Little Rock, 2.9 million tons of inbound and outbound waterborne traffic were handled. He says the tonnage has grown in subsequent years as follows: in 1970, when navigation was opened to Fort Smith, to 4 million tons; in 1971, when navigation was developed to Tulsa, to 4.3 million tons; in 1972, to 5.3 million tons; in 1973, to 5.6 million tons, and in 1974, to more than 6 million tons.

Breaking down the 1974 tonnage figures according to commodities, Adams says they were as follows: bauxite (inbound) 516,506 tons; iron and steel (mostly inbound) 317,602 tons; sodium hydroxide 122,950 tons; chemical fertilizers 186,227 tons; other chemicals 14,917 tons; petroleum products 841,006 tons; coal 174,300 tons; soybeans 370,069 tons; wheat 123,377 tons; other grains, 155,225 tons; sand and gravel 2,234,131 tons; rock 742,425 tons; and miscellaneous items 205,555 tons.

Inbound traffic in 1974, Adams explains, totaled 1,949,783 tons and outbound 774,836 tons. Meanwhile, 2,958,640 tons originated and terminated on the system, and 377,094 tons of through traffic passed through the system.

Adams says that $1.7 billion in capital investment has been made in water-transportation-related industries in Arkansas, and $1.4 billion in Oklahoma, a total of $3.1 billion. It is estimated, he adds, that 18,000 new jobs have been created in water-based industry, and that for every 100 jobs created in water-based industry 100 to 135 jobs spring up indirectly in retailing, wholesaling, professional, and service industries.

"The net effect," he comments, "is more taxes, better schools and libraries, and improved srevices.

"We believe that inland waterway transportation as it has developed in the Arkansas River basin has provided a big benefit for the nation's balance of trade. Much of the agricultural products moving on the waterway, and some of the coal, are foreign-bound. With the increased demand for coal caused by the energy problem, it looks as if our coal industry is picking up."

Agricultural products grown in the Arkansas River basin include, besides soybeans, rice and cotton. It is estimated that 50 percent of the soybeans and 65 percent of the rice move to foreign markets.

An ocean-going barge loaded on the Arkansas River can be moved to any port in the world. According to those interested in fostering river traffic, waterborne commerce provides a great saving. Comparative transport costs cited for 1973 were as follows: waterborne traffic, three mills per ton mile; rail, 12 mills; and truck, 65 mills.

Ms. Willeen Hough, of the EDA office

at Little Rock, explains that a study is under way to determine whether a slack-water facility can be established at North Little Rock. A slack-water facility is one in which the waterborne traffic is not affected by the velocity of the river flow. The EDA has provided a grant of $30,000 for this study.

Ms. Hough reports as follows on major port facilities along the waterway in Arkansas which the EDA has helped to finance:

Pine Bluff: A port and industrial park development consisting of the river port, industrial park, hydraulic fill, streets and roads, rail spur, water and sewer utilities, water storage and public terminal. The industrial park development includes 372 acres, of which 84 acres have been occupied by industries employing 305 people, 266 of whom were brought in after the industrial park project was completed.

Seven industries have located in the industrial park, including Cargo Carriers Inc., the first installation in mid-America to mass-produce jumbo river barges; a facility for storing liquid chemicals; a poultry-feed processing establishment which has induced 40 farm families to go into the broiler business, with the result that a broiler-processing plant has been expanded in Pine Bluff to employ 50 additional persons.

Rice and soybeans are shipped from the port, which has the advantage of slack water. Products brought into the port include jute for several carpet mills located in the area, and vermiculite from South Africa which is heated and expanded for use in fertilizer, concrete and insulation.

In 1972, Pine Bluff led the state in dollar industrial growth. Jefferson County, in which Pine Bluff is located, was one of three in the surrounding 10-county area which showed a growth in population between 1960 and 1970, increasing from 81,000 to 85,000. Indirect benefits of the Pine Bluff development include a boost in savings and loan deposits between 1960 and 1970 of from $62 million to $126 million.

New dimension added

Local citizens feel that the port and industrial park in Pine Bluff will be one of the most important in the growth of southeast Arkansas, that completion of this project will meet a pressing need of the entire district, that a new dimension has been added to the local economic structure, and that the jobs created in the initial stages are only a fraction of those that will spring up in the future.

EDA has authorized grants totaling more than $6 million for Pine Bluff, of which more than $1.8 million have been for development of the industrial park, water and sewer improvements, and other facilities.

Fort Smith: Development at Fort Smith includes a dock, access bridge, access roads, a rail spur, and dolphins to which boats can be tied. U.S. Forge Craft has located there, manufacturing parachute hardware, safety hardware, forgings, ordnance parts, and rocket missile components, and employing 110 people.

Because of the business slump, Fort Smith has lost a great many jobs in recent months, but the improvements that have been made offer a hopeful prospect for future development. EDA has approved grants totaling $4.6 million for Fort Smith and Van Buren, of which nearly $1.9 million has been for the river port, improvement of water facilities and sewage pumping station.

Little Rock: A major development has been the construction of a 22-inch water line from a storage place on an adjacent mountain and across town to the local industrial park. A large number of industries have been brought to Little Rock, including a fruit packing company, a scrap metal operation, and a pleasure-boat manufacturing company. In consequence, 420 jobs have been created up to this time. General Electric has an option to acquire 170 acres in the industrial park, and expects to employ 2,100 persons in a warehousing operation.

EDA has authorized nearly $4.8 million in grants and loans for Little Rock, of which $1.4 million has been for the water line and storage facility.

Russellville-Dardanelle: A large development is projected for the Russellville-Dardanelle area. Thus far EDA has authorized grants totaling more than $2.5 million for Russellville, most of it for water facilities.

The main port developments in Oklahoma are at Muskogee and the Tulsa Port of Catoosa.

Muskogee: According to Mrs. Diddy Finley, Secretary of the Muskogee City-County Port Authority:

The port, which belongs to the Authority, consists of 320 acres for industrial development, of which 288 acres remain to be developed. The port is leased and operated under a 25-year lease by Willbros Terminal. It is designated as a U.S. Customs station.

Facilities at the port include a 58,000 square foot steel storage warehouse, an 18,000 square foot transit shed, a fueling depot, two 10-ton overhead cranes and one 25-ton crane.

The Muskogee port is a distribution center for several steel companies. The main commodity handled is iron and steel articles. Other materials handled include bulk fertilizer, newsprint paper, oil pipeline pipe, pipe coating, tin slag, glass, liquid fertilizer, soda ash and peanuts. In 1974, 51 barges were handled at the port bearing 38,815 tons of materials and commodities as compared with 47 barges loaded with 26,726 tons in 1973.

One of the industries attracted to Muskogee is a company making caps for pop bottles. In the fourth quarter of 1975, a decoiling line is to be assembled in Muskogee, a facility which takes coil steel and cuts it to prescribed lengths. The Muskogee port has a 20,200 square foot shell building which provides the hull of a structure that a company may take over and finish as it desires. As a tourist attraction, the port has a submarine, the *USS Batfish*.

EDA has furnished $3.4 million in grants and more than $500 thousand in loans for the Muskogee port, dock, industrial park, and sewer developments.

Tulsa Port of Catoosa: Harley Ladd, Port Director, reports:

The port area consists of 2,000 acres, with a terminal area of 500 acres and a 1,500-acre industrial park. There are three miles of waterfront inside the port's own channel.

Facilities available

Facilities include a 720-foot dry cargo wharf which can accommodate three or four barges, a 38,400 square foot transit shed and a traveling crane that can lift 200 tons and handle containers. There is a new grain elevator with a 310,000 bushel capacity. Barge, rail, or truck traffic can be handled. A dry bulk unloading facility with a conveyor system handles fertilizer mainly. Twelve dolphins provide mooring for barges. The port has two warehouses of 120,000 square feet each, and work is to start on a third.

In the industrial park the Universal Oil Products Company has a $15 million facility producing catalytic converters for autos. There is a plant producing ready-mix concrete. One 5,000-barrel and one 10,000-barrel storage tank provide storage for liquid chemicals. The port is served by 17 barge lines and the Frisco and the Sante Fe railroads.

Utilities include a 24-inch high pressure waterline to the port area operated by the Tulsa water department, a 24-inch high pressure gas line, and primary electric power. There are sewage treatment lagoons that meet environmental standards.

The port, which opened January 1, 1971, handles quite a bit of steel. Other materials handled include grain, fertilizer, some paper and coal. The grain that moves through the port, now amounting to about a million bushels a month, is expected to increase.

In 1974, 282,521 tons of commodities and materials moved through the port as compared with 162,350 in 1973. Across the Verdigris River, a fertilizer plant is under construction, part of the growing number of industries attracted by the port.

EDA has authorized grants totaling $838,760 to help install a sanitary sewer system and to develop the industrial park at the Tulsa Port of Catoosa.

Reusing Wastes Is One Answer To Cities' Trash, Energy Problems

In a very promising attempt to kill two birds with one stone, several of America's cities have undertaken programs to turn their worthless mountains of trash into precious energy. There are basically two ways in which recycling, or resource recovery as it is more formally known, can save energy. First, more than 30 times as much energy is required to fabricate aluminum and two to three times as much energy to fabricate steel from primary, or virgin, materials as from secondary materials. Favorable ratios also exist in paper production and other industries. Second, new methods are being developed for burning refuse and harnessing the energy thus produced to provide heat, electricity, air conditioning, hot water and other utilities.

For the first time in its history, the United States has acknowledged that it is running short of some raw materials. While imports will take care of some of the short-falls, the energy crisis of 1973 has shown the hazards of relying on limited foreign suppliers.

The leading source of material presently unrecycled but with the greatest potential for reuse is municipal solid waste. Scrap (iron and steel), nonferrous metals and paper are already recycled by the industries that produce them, and the limited market for used rubber tires is being exploited to the fullest

According to a survey by the National League of Cities/U.S. Conference of Mayors, mayors and city councilmen polled named solid waste as the major urban problem. Each year more than 100 million tons of solid waste are collected in the United States, at a collection and disposal cost estimated at $6 billion.

Municipal solid waste can be disposed of in five ways:

- Open dumps and burning—these are gross pollutants and are being eliminated as laws are passed outlawing them.
- Incineration—with proper pollution controls, this provides a means of reducing solid wastes for further disposal or recovery.
- Sanitary landfill—this is a growing disposal method, but is not able to accommodate all the available waste.
- Recycling—this is most effective with scrap and nonferrous metals, paper, glass and textiles.
- Energy production—in addition to the energy saved in using secondary rather than primary materials, the wastes themselves can be burned to produce energy.

Most municipalities have settled on a combination of the last three as most effective.

Although urban wastes make up only a small part of the total production of waste, their disposal is extremely important because they are generated where people live and where there is limited storage space.

Recycling of municipal solid wastes will succeed only to the extent that the following criteria are met:

- The municipality must find the cost of resource recovery competitive with disposal.
- The purchaser of the recovered materials must find the cost competitive with primary materials and they must meet his product specifications.

The ideal method of preparing municipal solid wastes for recycling is to have them separated at the source. This is where citizen cooperation and participation is vital. Newspapers and magazines must be kept and collected separately. Glass bottles must be separated by color. Aluminum cans should be separated from mixed metal ones. All of this requires time and effort on the consumers' part, and will be successful only if people are persuaded that it is worth that time and effort.

Many Americans first became conscious of the potential of recycling following Earth Day 1970, a citizen-originated event in which observances were held nationwide to emphasize ecological conservation. Recycling centers were set up by citizen groups around the country. Many of these are still operating, joined by other newer ones. Some have closed due to a variety of problems. One difficulty has been matching up the materials available for recycling with the buyers of secondary materials. This is essential, because these carefully-saved materials are of no value unless somebody wants to use them.

Why has recycling suddenly gained public attention?

- It is a positive movement that gives people a sense of optimism, a feeling that an individual can make a difference.
- The energy crisis has helped to make Americans aware that the country's resources are not boundless.
- Pollution has increased to a point of great concern—many localities announce a daily pollution index, and individuals with respiratory problems are advised to stay home.
- People have become aware that the costs of energy will continue to rise.
- The U.S. balance of payments will be helped if less foreign raw materials are purchased.

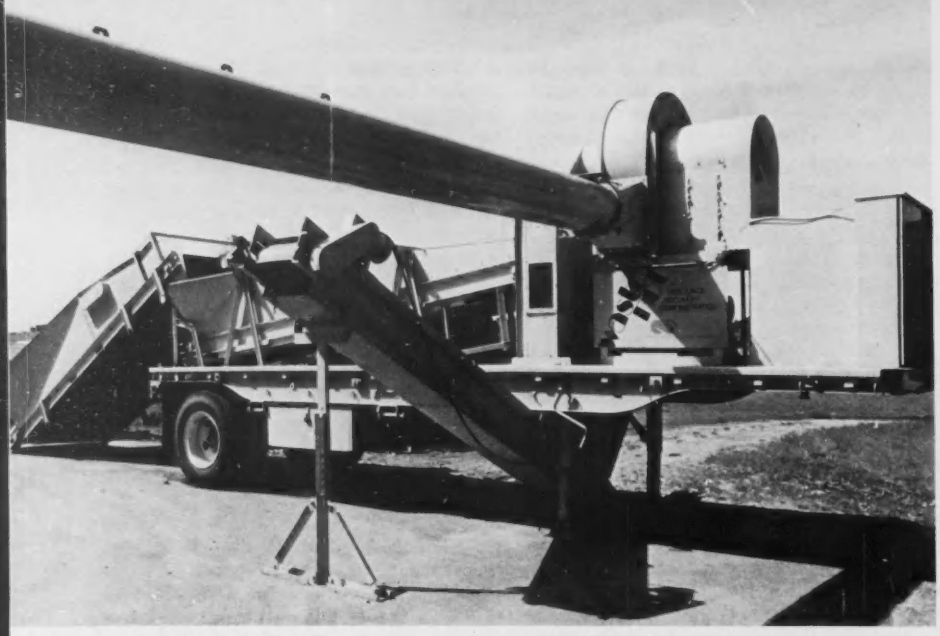
So, for economic and health reasons as well as aesthetic ones, Americans have developed a new interest in recycling.

The Environmental Protection Agency estimates that the energy-producing po-

What Is Municipal Solid Waste?

According to a study by the National Center for Resource Recovery, municipal solid waste consists approximately of the following percentages of:

Food, animal, plants, other wastes	43
Paper	33
Glass	9
Ferrous metals	8
Other metals	1
Textiles	2-3
Rubber	1-2
Plastics	2



TEN TONS PER HOUR—*That's how much trash this mobile air classifier, shown here in a demonstration model of the National Center for Resource Recovery, can handle. Air classifiers separate out the light, primarily organic fraction of the refuse from the heavier portion.*

tential of post-consumer wastes from all U.S. standard metropolitan statistical areas (which contain 70 percent of the total population) could have supplied the entire energy needs of the U.S. for residential and commercial lighting in 1970. By recycling wastes into energy, not only is the cost of disposal eliminated, but the energy savings also represent a dollar savings.

A significant change in attitude is indicated by the amendment of the Solid Waste Disposal Act of 1965 by the Resource Recovery Act of 1970—from "disposal" to "recovery" in five years.

However, despite all the attention paid to recycling in recent years, the United States today recycles a lower percentage of its resources than ever before in history, according to the Environmental Protection Agency.

"Only one percent of municipal wastes are recycled," states a report of the National League of Cities/U.S. Conference of Mayors. ". . . almost everyone agrees that about one quarter of the country's solid waste is potentially recoverable and reuseable. We believe the rate is even higher."

The same report also points out that in the past 50 years, the amount of waste discarded per person in the United States has doubled. Also, "our population increases only one percent annually, while wastes are increasing at the rate of 5 percent."

"The costs of recovery plants are estimated to be relatively high, making recovery by technological means attractive only in areas where high disposal costs prevail and local markets for waste materials exist," according to Arsen J. Darnay, EPA's Deputy Assistant Administrator for Solid Waste Management. "There is evidence that recovery by separate collection is not only feasible but economically attractive provided that the collection utilizes an existing transport system and markets for the collected materials exist.

"Preliminary research and analysis indicate that compared with virgin material extraction and processing, resource recovery results in less atmospheric emissions, waterborne wastes, mining and solid wastes, and energy consumption.

"Recycling should become more economical relative to other solid waste disposal options during the next several years. Energy costs are rising, making energy recovery more attractive and more economical. As pressures to bring about environmentally-sound waste disposal increase, disposal costs will rise, and recovery will become a more attractive alternative. Finally, to the extent that air and water pollution control regulations are strengthened, the industrial incentives for using secondary materials will improve," Darnay says.

Everyone has some acquaintance with resource recovery. Older members of society recall it in the form of the "junk man." Youngsters know it as a recycling center. Whatever the title, the principle is the same: used paper, cloth, glass and metal have some reuse value. The task is matching up the collector, the seller and the buyer.

In the past decade, the number of salvage industry companies has decreased by nearly 20 percent, to approximately 7,600. This does not mean that business is down. On the contrary, sales and employment in the industry are increasing. The actuality is that the smaller companies are merging with larger ones. The equipment used today in resource recovery is extremely expensive, and only a major company can afford it—a high-density baler costs $150,000, for example. Shredders cost in the millions.

Some have argued that federal tax policies and freight rates presently favor use of virgin materials. And some federal regulations specify that goods purchased must be made of primary materials.

"It is incongruous," points out M. J. Mighdoll, executive vice president of the National Association of Recycling Industries," that a nation which officially recognizes that it is running out of resources still employs policies which encourage the mining of limited ores and is reluctant to initiate laws and policies to enable the recycling of millions of tons of waste raw material assets."

To spur recycling, the Citizens' Advisory Committee to the Council on Environmental Quality, a Presidentially-appointed group, has recommended several changes in federal policy:

- Revise tax provisions which presently make it more economical to extract raw materials from natural resources than to recover useful materials from wastes.
- Offer a tax credit for investment in new plants and equipment geared to recycling.
- Possibly impose disincentive measures, such as taxes on products that contribute heavily to solid waste. In the interim, the committee lauds such actions as that of the state of Oregon, which passed a law limiting the use of disposable beverage containers.
- Restructure government procurement policies to favor use of recycled products, which is presently forbidden in some instances. This has already been accomplished in the case of paper.
- Realign freight rates to encourage use of secondary materials.

Pilot programs begun

Many new methods of recycling wastes are being tried out. Pilot programs in New Orleans, St. Louis and Washington, D.C., with financial support from the federal solid waste management program, will help determine which ones work best.

The New Orleans plan involves contracts between the city, the National Center for Resource Recovery, and Waste Management, Inc. of Oak Brook, Ill. A two-part facility, costing an estimated $5.7 million, will be developed. The first part will include receiving and shredding of the refuse and landfilling of the residue. The second will be comprised of magnetic separators, screening systems, heavy-media separators, electrostatic sep-

arators, and equipment for optically sorting glass by color, to enable resource recovery.

New Orleans will provide a landfill which will receive the lighter, organic fraction of the refuse, converting the present site into valuable industrial property, according to the NCRR. The city will also supply some 650 tons of municipal refuse per day to the facility for conversion. Commitments have already been obtained to purchase the recovered materials for periods ranging up to five years, and the city will share in the profits. Disposal costs are expected to decrease by at least half.

A project to burn refuse as a supplemental fuel in modified utility boilers was undertaken in St. Louis in 1972 with the participation of the Union Electric Power Co. and funding support from the Environmental Protection Agency. In this operation, according to NCRR, residential refuse is shredded and separated into combustible and noncombustible portions by a system of air classification. The combustible fraction represents a low sulfur fuel that is used as a supplement to coal in the modified Union Electric boilers and replaces about 10 percent of the coal on heat value basis.

Last winter Union Electric announced plans for a $70 million system to utilize a major portion of refuse from St. Louis and adjoining counties for both materials and energy recovery. It is expected to produce about 6 percent of the company's electricity.

NCRR and the District of Columbia's Department of Environmental Services have signed a one-year contract for an advanced Equipment Test and Evaluation Program. The program is being conducted at the city's main solid waste reduction center, and is the most extensive effort to date, according to NCRR, to analyze and compare a variety of recovery processes and equipment under a single roof.

NCRR is installing, operating and maintaining resource recovery equipment at the facility. It has access to the oversize, bulky waste disposal area and associated equipment, including the shredder, conveyors and magnetic drums, and to on-site laboratory measurement facilities.

Equipment suppliers and organizations have provided recovery processing equipment free or at a nominal cost. NCRR will make test results available to municipal governments, consulting engineers, systems designers and other interested parties.

Although this program concentrates on materials recovery, methods of using refuse as a source of energy will also be explored.

Other cities with energy and resource recovery systems under consideration or construction are: Baltimore; Chicago; Ames, Iowa; Boston and Lowell, Mass.; Albany and New York City; Akron; Nashville, and South Charleston, W. Va.

The Bureau of Mines of the U.S. Department of the Interior has conducted experimental work to determine the practicality of converting urban refuse, cellulosic waste and sewage sludge to heavy oil by heating under pressure with carbon monoxide and steam. Nearly 90 percent of the organic matter has been converted to oil, water and gas at temperatures of 250° to 400° C and pressures of 1,500 to 5,000 psi. The oil yield averages 40 percent. This is the equivalent of more than two barrels of oil per ton of dry, ash-free waste material. The oil from urban refuse and cellulosic wastes has a sulfur content near 0.1 percent, which makes it a desirable source of fuel oil.

The two largest cost items in the conversion of refuse to oil are the capital

Recycling Glossary

Recycle—To insert a material back into the process by which it was first formed.

Resource Recovery—Conversion of solid wastes into new raw materials and products, including energy.

Scrap—High grade wastes formed in metal processing or fabricating operations.

Nonferrous Metals—Metals other than iron and steel, and mixed metals.

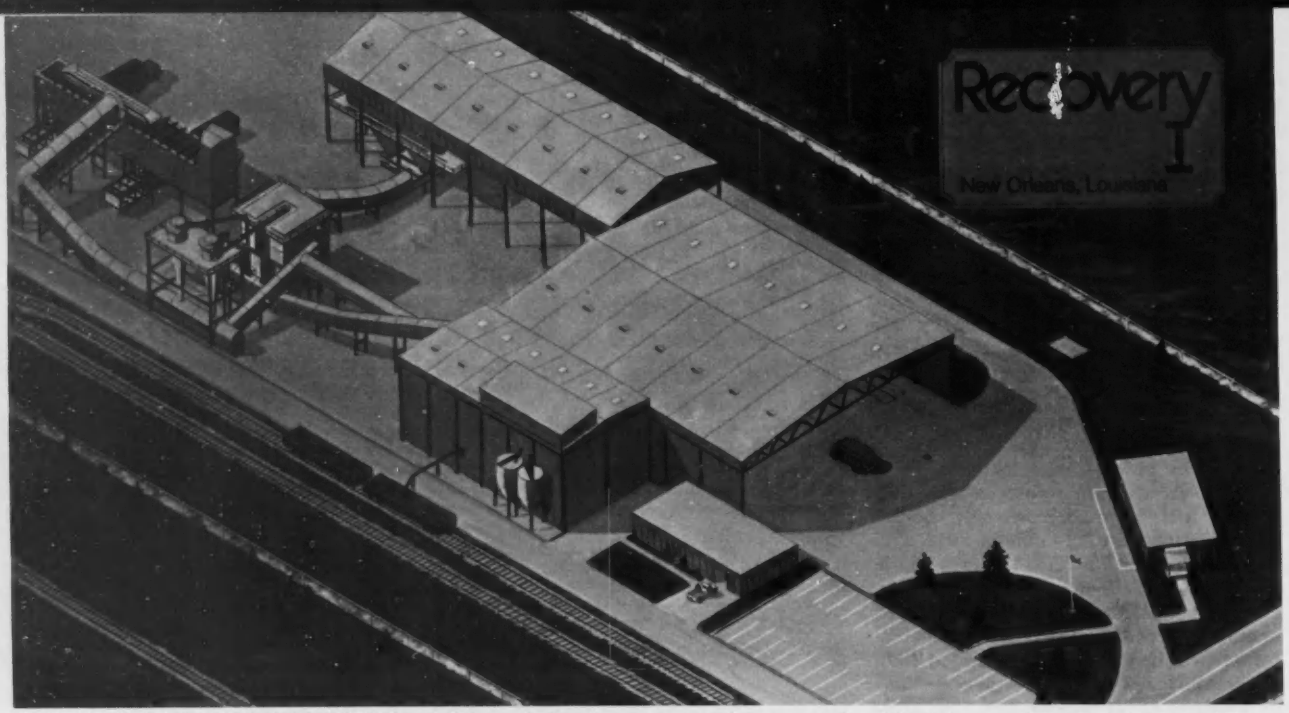
Secondary Materials—Wastes or scrap.

Municipal Solid Waste—Those obsolete materials discarded by domestic, commercial and municipal consumers which would normally be picked up by city trash collections.

Sanitary Landfill—A method of disposing of refuse on land by reducing it to the smallest practical volume, spreading it at a designated site and covering it with a layer of earth. With long-range planning, these sites can later become park lands, golf courses or ski slopes.

Energy Recovery—Use of shredded or pulped waste as supplemental fuel, pyrolysis (chemical decomposition of waste in a high temperature, low oxygen atmosphere) to produce oil, gas or steam generation, or incineration with electricity generation.

SURPRISING PACKAGES—*Aluminum beer cans are compacted into blocks, to be shipped back to the factory for recycling. Use of aluminum for beverage containers is increasing, due in part to its reusability and to fluctuations in the supply of tin, which coats steel cans.*



GOES RUBE GOLDBERG ONE BETTER—*Artist's rendering shows New Orleans Recovery I facility now under construction. Truck dumps load (center right) after weighing in. Waste is shredded in shed (top center), then proceeds to air classifier, where light organic material is separated and loaded on truck (upper left) to be delivered to landfill site. Heavy remainder is further separated into ferrous metals, being loaded on railroad cars (center bottom), and glass, wood, aluminum and mixed metals which will be removed by truck or train.*

investment in high-pressure equipment and the cost of carbon monoxide. After the feasibility of the conversion of refuse to oil was established in the Bureau of Mines study, the research was directed towards determining the lowest temperatures and pressures at which the conversion would take place, in an effort to minimize capital costs and carbon monoxide consumption.

Another Bureau of Mines experiment tested the conversion of solid wastes into pipeline gas. Basically, this hydrogasification is the reaction of the carbonaceous feed material with hydrogen to produce a product gas consisting primarily of methane. The Bureau compared collected municipal solid wastes with four materials regarded as suitable feeds for pipeline gas conversion plants: lignite, oil shale, bituminous coal and subbituminous coal.

With respect to the amount of solids needed to produce a given yield of methane, solid wastes were found better than oil shale and about the same as lignite. With respect to the amount of hydrogen that must be added to produce a unit of methane, municipal solid wastes, lignite and subbituminous coal are about equal.

Thus, according to Herman F. Feldmann, author of the Bureau of Mines report on the subject, "chemically, municipal solid wastes appear to rank with other fossil fuels that must be converted to satisfy our growing demand for pipeline gas."

One advantage of municipal wastes is that supply is greatest where the demand for natural gas is the highest, which is not true for some other feed stocks.

Before the conversion of solid wastes to pipeline gas can be demonstrated in an integrated plant, according to Feldmann, further development work must be done to define the best reactor systems, as well as to optimize individual plant components, and provide the necessary design data. He sees no apparent technical barriers to such a plant.

Sources Of Further Information

Information in this article is based on materials supplied by the following organizations:

Office of Solid Waste Management Programs, U.S. Environmental Protection Agency, Washington, D.C. 20460.

Bureau of Mines, U.S. Department of the Interior, Washington, D.C. 20240.

National Center for Resource Recovery, Inc., 1211 Connecticut Ave. NW., Washington, D.C. 20036.

National Association of Recycling Industries, 330 Madison Ave., New York, N.Y. 10017.

League of Women Voters, 1730 M St. NW., Washington, D.C. 20036.

National League of Cities/U.S. Conference of Mayors, 1620 Eye St. NW., Washington, D.C. 20006.

The National League of Cities/U.S. Conference of Mayors, in its report *Cities and the Nation's Disposal Crisis*, urges "a national effort . . . to decrease the volume of solid wastes generated in the United States; this must include attention to packaging standards." The report continues, "unless we reduce the total volume of solid waste generated nationally, and unless market prices begin reflecting product disposal costs, local governments will continue to be overburdened with the flow and the financing of the nation's solid wastes." The report goes on to recommend government regulation of "packaging practices and product characteristics that generate excessive solid waste and increase disposal problems."

In a legislative attempt to enforce reuse of materials, the state of Oregon enacted a law in 1971 banning cans with pull-tab openers and requiring a deposit charge on beer and soft drink containers, which had the effect of banning nonrefillables. The primary reason for support for the bill was that discarded beverage containers were comprising a large portion of roadside litter—19 percent by item and 62 percent by volume. The state reported that a survey taken after the law went into effect indicated that beverage-related litter had declined by 66 percent.

Obviously, municipal solid waste is a problem that just won't go away. In this era of energy shortages, it seems only sensible to consider ways in which the problem can be turned into an opportunity . . . an opportunity for energy conservation and, in some cases, for monetary savings.

Fitness Movement Seen Curbing High Cost Of Illness To U.S. Industry

Physical fitness or, more accurately, the lack of it, is becoming a growing problem for U.S. business.

The cost of physical degeneration is high for American industry. Dr. Roy J. Shephard of the University of Toronto's Department of Physiological Hygiene, writes that "the economic costs of chronic cardiovascular disease are staggering. Loss of production due to premature death in the United States has been set at $19.4 billion dollars per year, with further losses of about $3 billion due to illness. And these were 1969 figures!

Heart attacks alone annually cost industry approximately 132 million workdays. Once again this year, more than 100,000 men, many of them at the pinnacle of their value to the companies employing them, will die of heart attacks.

There are other, hidden, costs of physical degeneration. Industry pays when employees lack enthusiasm, want to call it a day two or three hours before quitting time, seem bored with the routine, or are obsessed with minor aches and pains which keep them home too often.

The National Aeronautics and Space Administration (NASA) conducted a study—the first of its kind—which not only showed that poor fitness is poor business but indicated that money invested in improving physical condition of employees could bring back dollar dividends.

Impressive findings

The NASA program included 259 executives between 35 and 55 years of age. After one year in the program, participants were asked to fill out questionnaires pertaining to their health attitudes and behavior, and they also were given physical examinations. The findings were quite impressive from an industry point of view.

About 50 percent of the participants who adhered faithfully to the program reported improved work performance and more positive attitudes toward their jobs.

Regarding personal health, 93 percent of the good adherers reported feeling better, 89 percent thought they had greater stamina and almost half felt less stress and tension. More than 60 percent lost weight.

"Through the use of an appropriate training regimen, it is possible to improve the working capacity by at least 15 to 20 percent," says Dr. Shephard.

Many firms are responding to the potential for such gains with ambitious fitness programs for their employees. "It's the fastest-growing area in physical fitness," says Glenn Swengros of the President's Council on Physical Fitness and Sports. The growth is so fast, in fact, that a National Association of Physical Fitness Directors in Business and Industry was formed last December to help provide some direction.

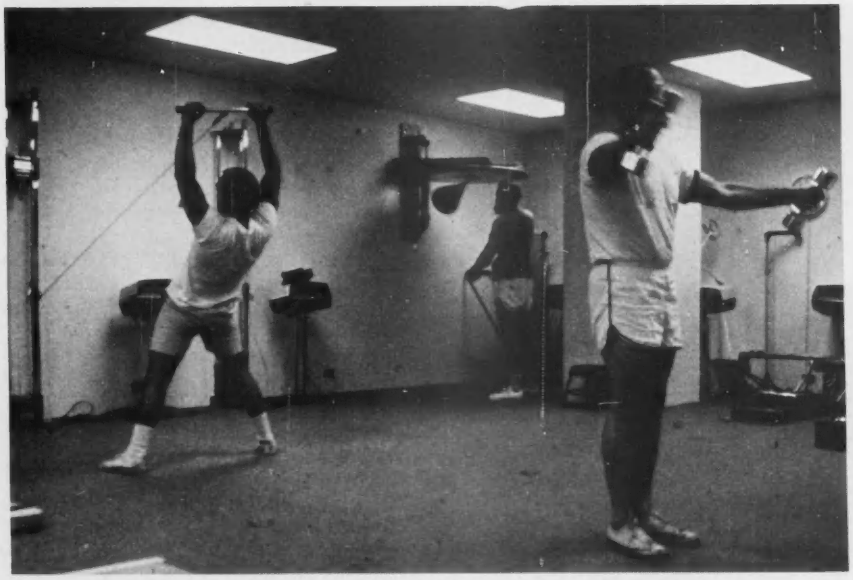
Although participants in such programs report that they feel better and are working harder, "It's very difficult, dollar-wise, to prove any specific advantages to the company," says Swengros. "We obviously feel that there are very real benefits, but we have no figures yet to prove the point. It will be up to the firms with long-established programs to furnish us with the data as it becomes available."

The collection of data will be one of the priority tasks of the newly-formed association. "There's a lot of information just lying around," says its director, Peter J. Brown of General Foods. For the first time, the association will provide a central point for collecting the data and organizing it into meaningful form.

What's being done

Company programs come in all shapes and sizes, generally in direct proportion to the amounts of money and executive commitment which are alloted to them.

R. H. Dobbs, Jr., president of the Life Insurance Company of Georgia strikes the theme: "It's good business to keep our key personnel healthy—it means less time lost. I'm also convinced that if we can add a few years to our employees' lives, it will mean a tremendous financial saving. Our people feel better, stay in better humor and can handle people better because of their participation in our fitness program. And they participate on company time. In fact, I insist on it. If they can't leave their jobs for at least



NO PAIN, NO GAIN—*Physical fitness authorities stress that getting in shape is hard, painful work at first. But the benefits to both individual and firm appear to warrant the effort. This is the American Can Company's exercise room in Greenwich, Conn.*

AN ENDLESS SEASON—*The physical fitness season never ends, as attested by this solitary jogger around the ice-glazed Tidal Basin in Washington, D.C. Competitive activity is discouraged until a person achieves a fairly high fitness level. Many experts rank jogging highly.*

one hour, two or three times a week, they're not organized and they shouldn't be in an executive position."

Dr. Richard H. Morrison, who pioneered an executive physical fitness program for the space division of the Rockwell International Corporation, says, "If our program saves the health of just a few executives, and I believe the score is already much higher than that, the cost will have been more than repaid. A healthier executive is a more effective employee. He contributes more when he is on the job and, because he's healthier, he spends less time off the job."

Who needs it?

Most persons who have sedentary jobs probably need to improve heart strength and endurance. No exercise program which ignores cardiovascular health is truly adequate. And that, of course, means vigorous physical activity sufficient to push up the pulse rate significantly. The pulse rate is the key to how much exercise is enough, but it must be pushed up high enough and held there long enough for cardiovascular conditioning to take place.

The ideal means of stressing fitness in industry is through in-plant and on-site facilities. This is preferred for a number of reasons:

- The company, through expenditure of money, shows a very concrete interest in employee fitness.
- It is more convenient for employees to use the facilities before and after—and during—working hours.
- The facilities become a topic of conversation. Employees are motivated when they hear their colleagues discuss their experiences.

According to C. Carson Conrad, Executive Director of the President's Council on Physical Fitness and Sports, "The principal indoor facility needed is an exercise area 24 feet by 40 feet minimum, and 30 feet by 50 feet desirable, with a 12 foot ceiling." The ceiling stipulation can be modified where necessary.

If the exercise room is the basic indoor exercise facility, "the principal outdoor facility needed for executive and employee fitness is a jogging course," according to Conrad. He adds, "Jogging should be included in every executive and employee fitness program."

Many authorities consider jogging—running with a slow, easy pace, interspersed with intervals of walking—the very best kind of exercise. It can be a group sport for the gregarious, or a quiet activity for the loner. Many a businessman has attested that his best decisions were made while jogging. And as a conditioner, there is no better activity for the cardiovascular system, in Conrad's view.

One of the most highly developed industry fitness programs is sponsored by Rockwell International where the primary goal is to encourage *every* employee and family member to participate in a daily fitness program.

Candidates for the fitness program first undergo a series of tests to determine their fitness level. Included is a thorough medical evaluation including a treadmill test for cardiovascular efficiency and a pulmonary function test for lung capacity.

Must have doctor's OK

Also required: a recommendation from the family physician.

The program is strenuous enough to produce significant improvement in the health and fitness of the participants, but no one is allowed to enter with the assumption that they will be instantly rejuvenated. It's explained from the beginning that it takes at least three to six months of *hard work* to reach an acceptable level of fitness.

All runners stress that it's no picnic at the beginning. As one participant in a recent noon-time jogging meet for federal workers put it, "for anyone just starting out, it's painful. But after awhile it becomes relaxing."

The Metropolitan Life Insurance Company has also instituted a fitness program. The approach taken by Dr. William Cunnick, medical director, simply involves a physical fitness test for all interested men aged 20 to 40. Cunnick selects that age group "because in this age bracket most men increase their caloric intake and decrease their physical output."

The program is carried out at the home office in New York City. Participants are encouraged to begin reconditioning simply by leaving the subway at a convenient distance from the company and walking briskly to the office. A leaflet gives the distances from various locations throughout the city to the Metropolitan home office. It also provides a scoring system for covering the distances in a certain amount of time.

The National Science Foundation in Washington, D.C., has no fitness facilities whatever, but that apparent handicap actually turned out to be an advantage. Directly across the street from the Foundation building in Washington is a branch of the Young Men's Christian Association.

The YMCA gave the NSF a special group rate on a program including use of the gym, track, exercise classes, swimming, and newly-outfitted exercise rooms.

The National Science Foundation's story is not at all rare. Small corporations often cannot afford the type of facilities provided by major firms. Yet, inevitably there are fingertip facilities available.

Sometimes these facilities are within the plant itself. Such was the case with the NASA Stress Lab, which was built in an unused portion of a sub-basement at minimal cost.

When there is no in-plant space avail-

able, the National Science Foundation alternative is an excellent one. In New York City, for example, several major fitness-conscious companies are providing many of their employees with YMCA memberships. Among them are U.S. Plywood, Champion Paper, Union Carbide, Continental Can, Video Tronics, Colgate Palmolive and the Grolier Education Corporation.

In addition to the 1800 YMCA's located in major cities throughout the country, there are also health clubs, boys' clubs, Young Men's Hebrew Associations, summer camps and even high school facilities. School boards are often eager to make use of their facilities when they are not being used for school purposes. Some school systems even have open gym policies which make the facilities available to anyone who wishes to use them.

In many new luxury apartment houses around the country, exercise rooms and health spas are provided for tenant use. During much of the working day these facilities remain idle. A company aggressively seeking exercise facilities may easily persuade the management of such an apartment house to sign a contract making the facilities available to its employees during certain hours.

The alternative to using already available space is building new fitness facilities. Usually, that is much more expensive—but not always so. In fact, on occasion it is an excellent money saver.

A good example is the Flick-Reedy Corp. of Bensenville, Illinois. Flick-Reedy's employees enjoy a heated indoor swimming pool that cost the company $90,000—and by building it the company saved $70,000! That's because the swimming pool replaces a water tower that would have cost $160,000.

The Gates Rubber Company of Denver began its executive physical fitness program in 1963. A specific exercise program is prescribed for each individual based on his fitness status. Equipment used is the most modern available, especially designed to increase breathing and strengthen heart action.

A full-time masseur and physical therapist is on duty to alleviate aches, pains and ailments. All workout clothing is provided, along with soaps, shampoos, towels and toiletries.

The Xerox Corporation promotes a far-reaching fitness program A multipurpose recreation building at the Xerox facilities in Webster, New York, includes an exercise area with physical fitness equipment, table tennis, lockers and showers, a basket room, an executive fitness laboratory and an outdoor area including six baseball diamonds, a putting green, a jogging and cycling path, lighted basketball and tennis courts, bleachers, an archery range and a skating rink. Jogging paths are located at several other Xerox plants, as well as softball diamonds and fully-equipped exercise rooms.

The company's executive fitness specialist runs the program on a no-nonsense basis. Participants are given a handbook which spells out clearly "a minimum attendance requirement of five times every two weeks with a minimum of twice every week." The reasons are twofold, according to the handbook.

1) "Studies have shown that a moderate fitness level begins to deteriorate as shortly as a week to 10 days from the interruption of training. Inconsistent or sporadic attendance will fail to develop the 'training effect' and may even prove more harmful than beneficial.

2) "There is a large waiting list for both the noon and evening programs and these people are very anxious to get into our program. It is not fair to have a person occupying a locker or basket and not making maximum use of it."

Appreciate toughness

Far from being discouraged, participants seem to be grateful for the tough rules. Most sign up for the program in the first place because they are uncomfortably aware of the inroads sedentary living has made on their health, appearance and self image. Yet they know the flesh is weak, and if the rules permitted sporadic attendance they would be tempted to take the easy road.

Another company with excellent fitness facilities is Phillips Petroleum.

The center of activities is the headquarters office in Bartlesville, Oklahoma. The 45-by-100-foot indoor swimming pool is the most popular of the fitness facilities. Some employees use it strictly for conditioning purposes, much like a jogging path. But many courses are taught at the pool, too: swimming, life saving, skin diving, and even scuba.

During the summer and on weekends during the year, the facilities swarm with hundreds of children, the sons and daughters of the almost 3,000 families who pay the $10 a year dues for membership in the Phillips recreation club.

Phillips has a jogging program which issues certificates to participants who complete jogging increments of 200 miles in the course of the year.

Housewives, too—along with the company secretaries—are encouraged to exercise. A special women's exercise room has been built and about 35 women attend special weekly exercise classes. One of their goals is to jog at least 100 miles a year.

It is essential that any individual interested in vigorous exercise be given a screening test. Guidelines for evaluating would-be exercisers were published in the February 14, 1972, issue of the Journal of the American Medical Association. Generally, everyone over 40 should have an electrocardiogram, while those below 40 should be tested on their current physical capacity.

Armed with the results of an adequate

TAKE IT IN STRIDE—*These employees are using the indoor treadmill at Northern Natural Gas's Omaha headquarters. Success of a program is almost directly proportional to the amount of top executive support and the example they set by taking part.*

screening test, an exercise specialist can then prescribe a program to improve individual fitness. He will start the previously sedentary person with a walking routine, perhaps. This should be increased slowly and should never reach the point where the fatigue it produces cannot be relieved by a few minutes' rest.

According to the American Medical Association, walking should be at a speed to cover one mile in 20 minutes. Later the distance can be extended to three miles in one hour. At that point, the pace can be increased so that the three miles will be covered in 45 minutes.

After that, the participant can begin jogging.

Keep it casual

The criterion that the exercise program be noncompetitive is important. The same characteristics of determination and aggressiveness which make an executive successful in business may prompt him in an exercise situation to push himself beyond his physical capacity. Usually these people want to win badly, and they tend to ignore the body's warning signs. Once they have attained good physical condition, mild competition will be harmless. But in the beginning, the AMA warns, "The individual should set his own pace, even when he is exercising with others."

One of the best ways to encourage people to continue a fitness program is to show them evidence that their exercise thus far has paid off in health benefits. That can be easily done for any individual who has maintained an adequate fitness program for two months or more. Given a new fitness evaluation of pulse rates, blood pressure levels, weight and waist measurements, and allowed to compare these figures with those at the outset of the program, each individual will see for himself the value of the program.

It's often a good idea to prepare a brochure explaining the program in some detail, so that would-be participants are not suddenly amazed to discover there is a significant amount of hard work involved. Attendance rules, financial cost, clothing required, and any other conditions should be spelled out.

If a fitness program is to succeed, it must have the active and enthusiastic support of department heads and executives. Without their cooperation, it will be very difficult to convince the working force of the company that the program is worth their time and energy. It is everyone's responsibility to build the fire.

The Phillips Petroleum Company recently presented its chairman, W. W. Keeler, with a certificate recognizing that he had jogged 400 miles in one year. The achievement was recognized at a small ceremony and word of it soon spread throughout the company.

That same afternoon, the physical fitness director got about 20 calls from employees wanting to join the fitness program.

Says former Rockwell International Vice President for Marketing Services, Jim Daniell, "When the workers see their bosses out there huffing and puffing, and sweat streaming down their faces, they say to themselves, 'There's got to be something to this physical fitness, or these fellows wouldn't be working so hard at it."

Criteria

The President's Council on Physical Fitness and Sports gives six criteria that any company-sponsored physical fitness program should strive to meet:

- The program should be an adjunct of the company's health program.
- It should include a medically-oriented screening test as a criterion for participation.
- A person skilled in prescribing exercise should direct it, preferably an exercise physiologist.
- Exercise should be tailored to the individual participant, and should be progressively more strenuous, in order for him to benefit by it.
- Activities should be noncompetitive; individuals should compete only against their own performance, not against other participants in the program.
- A system of periodic evaluation should be included to measure progress and aid in program design.

This kind of push from the top has been the key to success for many company fitness programs. William Walton of Holiday Inns, Inc., of Memphis, went to his doctor for a physical checkup and was told to lose weight. Soon after, the company put into effect an executive fitness program. Walton told his executives, "This physical well-being is too good not to be shared."

A number of companies promote continuing interest in the fitness program through publication of a regular newsletter.

Awards as a means of recognizing improved physical fitness are important and effective. Rockwell International has an extensive awards system that begins by designating each individual to a particular squad, based on his pre-program overall medical and physical tests. If the examination indicates that he is a fitness novice, he is placed in the green squad. The red squad is for average fitness, the blue for better, the gold for good and purple for outstanding. Participants wear a "T" shirt and trunks that correspond to the squads to which they've been assigned.

Once the participants at Rockwell International reach the blue division, they are eligible for a series of special awards. They may obtain running awards for jogging 1,200 miles in one year or 75 miles in one week. The swimming awards are for covering 500 miles in one year or 26 miles in two weeks. Those who bicycle 5,000 miles in one year or 200 miles in two days are eligible, as are hikers who cover 50 miles in two days.

The awards system took another form with Lowe's Inc., of Cassapolis, Michigan. A couple of years ago the company president found that his top 14 men collectively were 120 pounds overweight. So he started ICATLYC, the "I Can't Afford To Lose You Club." The company doctor weighed each man and then gave him his optimum weight.

Each executive was allowed one week per pound overweight to reach his ideal. If he succeeded, he was paid 1½ percent of his annual salary. What's more, for every year he maintains his ideal weight, the bonus is renewed.

Presidential awards

An alternative to the company award program, or a supplement to it, is the Presidential Sports Award program of the President's Council on Physical Fitness and Sports. The Presidential Award is offered in most of the more popular participatory sports, including a number which have a high fitness content, such as swimming, jogging, cycling, skiing, tennis, and others.

Information on the program, including qualifying standards, application forms and personal logbooks, may be obtained free by writing to: Presidential Sports Award, Post Office Box 129, Radio City Station, New York, N.Y. 10019.

For more information on the activities of the National Association of Physical Fitness Directors in Business and Industry, contact Peter J. Brown, Fitness Director, General Foods Corp., 250 North St., White Plains, N.Y. 10625 (914-964-2542).

What aspects of the fitness program should be promoted? Studies conducted by the Heart Disease and Stroke Control Program of the Public Health Service showed that most men in a particular exercise program attributed their participation to the desire to feel better and healthier, and concern about lessening the chance of a heart attack.

These factors can be emphasized in selling the program. Once the program is under way, however, the participants become concerned about other things, and they recognize and appreciate good organization and leadership which brought them about. Because, surprising perhaps, once people begin exercising regularly, they find themselves liking it.

Energy Management Digest

STATE ENERGY CATALOG...The Federal Energy Administration has published a Catalog of State Energy Organizations, which lists the addresses, phone numbers, chief functions, key personnel, major activities, and publications of energy offices in the fifty states. The information was provided by each state energy organization. In addition, the catalog provides an index of the names and phone numbers of key personnel and an index of state energy projects. Copies of the Catalog of State Energy Organizations are available at no charge from FEA's National Energy Information Center, Federal Energy Administration, room 1407, New Post Office Building, Washington, D.C. 20461 (202-961-8685).

GEOTHERMAL STUDY...Commerce's Economic Development Administration has approved a $35,000 grant to help study the feasibility of using geothermal energy to stimulate long-range economic growth and create jobs in northeastern California. The funds will help to pay costs of a study in Lassen and Modoc counties by the Geothermal Unit of the State's Division of Oil and Gas. State officials said use of geothermal water in greenhouse farming could create jobs in this high unemployment area. The study will also consider use of the area's geothermal water as an energy source for light industry and in expanding cattle operations. The State of California will provide $17,300 to complete the $52,300 total cost of the 12-month study.

PERVASIVE PROBLEM..."The single most pervasive problem facing our economy today is the basic reorganization through which it is going due to the quadrupling of energy costs," Commerce Secretary Dent told a recent conference on productivity, adding that the problem is "destined to be with us for years to come." Speaking before a Decatur, Ill. Conference on Productivity and the Quality of Worklife, Dent said conservative economic estimates indicate that the increase in world oil prices added well over 5 percent to the rate of inflation in 1974. "In effect, we all took a sudden and significant cut in purchasing power from this single cause. The effect on unemployment has also been apparent," he observed. Saying there is a strong relationship between a nation's energy consumption and its productivity, Dent added that there are "clear indicators that we should be able to use our energy much more effectively."

SUPPLIES HOLDING UP...The FEA's supply and demand forecasts for 1975 see adequate supplies of motor gasoline, distillate fuels, residual fuel, kerosene jet fuel, naphtha jet fuel, petrochemical feedstocks, liquefied gases and "other products" (aviation gasoline, ethane, kerosene, road oil, wax, coke and others) for the rest of the year.

HIGHER PROPANE STOCKS...Inventory data from the American Petroleum Institute showed stocks in the hands of propane producers and terminal operators at 80 million barrels at the end of September, an increase of almost 12 percent over the September 1973 level. At the first meeting of the LP-Gas Industry Advisory Committee held November 22 at the FEA, no alarm with respect to shortages for traditional users was voiced. Members were emphatic, however, that propane supplies were not adequate to offer any substantial assistance to industrial and utility energy users who suffer natural gas curtailments. The Federal Energy Administration adopted new price regulations, effective January 1, to keep the prices of propane, butane, and natural gasoline as low as possible without affecting dwindling supplies of these key petroleum products. Propane and butane are familiar to millions of Americans as "bottled gases" and are used in stoves, refrigerators, water heaters, space heaters, and furnaces. Natural gasoline is a liquid product extracted from natural gas which is generally blended with products refined from crude oil to produce motor gasoline. The new regulations involve some differences in propane prices because crude oil is more expensive than natural gas, and both are essential sources of propane. The final regulations establish a new, cost-based price regulatory system based on May 15, 1973 prices. Another new rule permits higher prices for those natural gas liquids extracted in gas processing facilities constructed after January 1, 1975, providing an incentive to construct new facilities. FEA also issued an emer-

gency amendment to its allocation regulations requiring refineries using propane as boiler fuel not to exceed the amounts they were using for that purpose between April 1, 1972 and March 31, 1973.

FUEL OIL SALES PROBE...A special federal task force of 30 investigators is looking into potentially widespread price-gouging involving sales of fuel oil to public utilities. If violations are as widespread as early information indicates, the investigation could result in tens of millions of dollars in overcharges being returned to U.S. consumers. The investigation began in the South, has since spread to the East Coast and Midwest, and may eventually involve the entire country. The alleged violations mainly involve apparently spurious transactions by fuel oil marketers and brokers which raised the price of distillate (no. 2 heating oil) and residual fuel oil by as much as 300 percent between the refinery and utilities. In at least one instance the price of the fuel oil involved was raised 300 percent while the oil moved only a few miles from refiner to fuel storage terminal. One single power company may have been overcharged as much as $15 million. "I want to emphasize," an FEA official said, "that the very great majority of fuel-oil merchants and brokers are completely honest. Most have complied with our regulations, and even most of the violations have been honest mistakes that were readily rectified once our auditors pointed them out. Our ultimate aim is to get the dollars returned to the consumer in the form of price reductions on future purchases."

SUBSCRIPTION DATA...The Federal Energy Administration's Monthly Energy Review is now available on a subscription basis from Commerce's National Technical Information Service. The Monthly Energy Review contains volume data on all major energy sources, petroleum price information, plus a section on electric utilities and resource development. Each issue contains data through the two months prior to its issue date and is released in the second month after its issue date. Thus, the December issue, with data through October, will be released in February. The publication will cost $36 for a one-year subscription and can be obtained from NTIS Sales Dept., 5285 Port Royal Road, Springfield, Va. 22151. Checks should be made payable to National Technical Information Service.

"OLD OIL" COSTS EQUALIZED...Final regulations governing FEA's "Old Crude Oil" Entitlements Program, are designed to substantially equalize costs of crude oil for U.S. refiners and bring the costs of the principal imported fuel oils more into line with those of domestic products. The regulations are intended to enable independent refiners and marketers, who depend heavily upon high cost crude, to remain competitive with those having lower crude costs. The entitlements program will allocate low-priced "old" oil proportionately among all refiners, thus significantly reducing cost disparities that have existed between refiners with access to "old" oil, and those who have had to depend on more costly domestic (new) and foreign oil.

POLLUTION ELIMINATOR...Energy Sciences, Inc., of Bedford, Mass., recently shipped its 12th energy-saving CB-150 Electrocurtain electron processor laboratory unit since its introduction in 1973. Applications of the Electrocurtain include the development of paints, resins and coatings, quality control of paints and manufacture of adhesives and laminations for textiles, apparel and footwear. By using solvent-free high solids coatings, the Electrocurtain process reportedly eliminates solvent recovery and air pollution problems. This non-thermal system reportedly requires only one percent of the energy necessary when using gas-, oil- and propane-fired thermal ovens. Plastics and textiles manufacturers also employ the process because of its low temperature, pollution-free, energy conserving advantages.

DEFENSE'S COAL PRIORITY...The Federal Energy Administration has established procedures giving the Defense Department first priority in securing the coal it needs to meet essential military requirements. FEA can require coal companies to supply coal to the Defense Department on a priority basis above their other contractual obligations. Coal firms which comply with FEA orders, the energy agency said, will be immune from any damages or penalties which might otherwise result from their inability to fulfill contractual obligations to non-military users. Suppliers who must reduce their deliveries to non-defense contractors in order to supply the military will be required to do so on a proportionate basis. Persons or firms adversely affected by priority orders will be entitled to file appeals with the energy agency.

Demographic Analysis Service Helps U.S. Business Discover Markets Thru Census Data

Commerce has developed still another tool to help U.S. firms pinpoint the markets for their goods and services.

The Demographic Analysis service, now available from the National Technical Information Service, will seek out pertinent market data from more than 2,000 magnetic tape reels of census data. The material forms an extensive data base of demographic/geographic information for researchers, marketing specialists, project planners, economists and other professionals. This special Demographic Analysis service will provide detailed reports tailored to a firm's specific needs—on households, communities, businesses, and industries in the United States. NTIS analysts will help in getting maximum specific information from the data.

The data base may be referenced in terms of elements such as: age, race, sex, family relationship, marital staus, parentage, housing, income, labor force and employment for any geographic location in the United States. It is possible to obtain complete definitive information about many segmented sections within the base. For instance, the housing section contains specific data, by locale, on values and rentals . . . occupancy . . . heating . . . sewage . . . plumbing . . . kitchen, toilet and bathing facilities . . . home equipment . . . income . . . and more.

This broad data base allows a wide range of options in manipulating and massaging the data to obtain specific information in sharply circumscribed areas of interest—whether demographic, geographic, or economic.

This valuable information is being made available to the public for the first time. Demographic Analysis was begun in 1967 by Commerce's Economic Development Administration to develop data for its economic planning and development activities. Structuring such a data base and developing the search programs required to use it efficiently would cost an individual business or industry millions of dollars. Now, through the National Technical Information Service, this vast store of significant socioeconomic data is available for commercial use.

The cost of the service could vary from a very few dollars to a great many dollars, according to John L. Milanese of Commerce's Economic Development Administration. "If all you're doing is getting the computer to regurgitate straight factual information in a single area, the cost could be as low as $50-$100. However, depending on the amount and complexity of the manipulations requested, the cost could run as high as $5,000."

Versatility

From the data and programs available, Demographic Analysis can help firms:

- Plan for realistic future growth and diversification;
- Evaluate area growth patterns—in income, education, housing, industry;
- Determine population or industrial concentration;
- Compare counties, states, or regions;
- Develop detailed demographic data on proposed market areas;
- Select prime markets;
- Determine requirements for vital services — transportation, education, sanitation, health.

The data base includes:

- Census Data Files—1950, 1960, 1970
- County Merge File—1952, 1962, 1967, 1972
- County Business Patterns — 1964, 1965-70
- Location of Manufacturing Plants—1958, 1963, 1967

Data from subsequent editions of these surveys will be included as it becomes available.

Access programs have been fully developed—debugged—and thoroughly tested over years of usage. The result is a completely operative, extremely reliable retrieval system which affords lowcost access to vital data.

Reports may be ordered as special computer printouts, including statistical tabies and composite maps when applicable, or as a custom magnetic tape. In either case, extraneous data is eliminated—the only data produced is that which has been specifically requested. For details call Edward Hicks at 703-451-1530.

How Government Statistics Kept Pace With Nation's Growth Surge

A historical report on federal, state, and local government statistics spanning the years 1902-72 has been issued by Commerce's Bureau of the Census.

The report, part of the 1972 Census of Governments, covers a period in which the population increased 163 percent, and American economic activity underwent vast changes.

The data include federal finances for selected years since 1902 and state and local government finances for selected years since 1957. Data on public employment are shown nationally for each year since 1940 and for selected years since 1953, and state-by-state for specified years.

Included in the report are gross and net national product statistics and national income and personal income collection covering the 70-year period. The report also includes data on intergovernmental and intragovernmental transactions, expenditures for national defense and international relations from 1942 to 1972; for federal veterans benefits and services from 1902 to 1972; for space research and technology; air and water transport and terminals; and a history of reporting financial statistics of state and local governments assembled in periodic censuses since 1850 and in annual surveys since 1898.

Single copies of *Historical Statistics on Governmental Finances and Employment,"* Volume 6, No. 4, are available for $2.90 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from Commerce District Offices.

Federal Agencies Cut Energy Use By 24 Percent During Fiscal 1974

Departments and agencies of the Federal Government used 24 percent less energy than they expected in fiscal 1974, more than tripling the original objective.

Frank G. Zarb, Federal Energy Administrator, announced that the savings amounted to about 90 million barrels of oil and $725 million in lower energy costs to the American taxpayer. As noted, it significantly exceeds the 7 percent reduction in anticipated energy use that federal agencies were directed to achieve last fiscal year.

Details of conservation measures and accomplishments under the Federal Energy Management Program (FEMP) during fiscal year 1974 are contained in its first annual report.

Zarb praised the 11 cabinet departments and the five most energy-intensive agencies in the Executive Branch, all of which took part in the program. The five major agencies are: General Services Administration, National Aeronautics and Space Administration, Veterans Administration, Atomic Energy Commission and Environmental Protection Agency. These 16 departments and agencies own or operate more than 99 percent of the Federal Government's vehicles, occupy 99.7 percent of all owned and leased federal buildings, and employ 98 percent of all federal personnel.

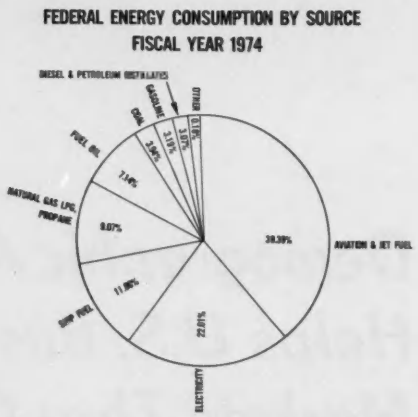
"Together," Zarb said, "they set an excellent example for the rest of the nation in prudent energy management. Because their diversified use of energy represents a cross-section of U.S. consumption, their proven methods of energy management and their commitment to conservation can be of great value to state and local governments, business and industry, institutions and private citizens."

Zarb called upon all government agencies for continued cooperation and assistance in meeting a new challenge by President Ford. In a memorandum to the heads of departments and agencies, the President directed that the Federal Energy Management Program be continued. He also established an energy saving goal for federal agencies for fiscal 1975 of 15 percent below that consumed in fiscal 1973. This would result in energy savings equivalent to 55-60 million barrels of oil during the year.

Top energy savers

Major findings of the fiscal 1974 annual report included:

- The Department of Defense, by far the largest energy user in the federal establishment, compiled the largest savings during the year, 25 percent. NASA was second, at 24 percent; GSA was third, at 21 percent.
- The savings were achieved by tightly managing the use of energy in buildings and facilities and the use of fuels in motor vehicles, airplanes, ships and equipment.
- About 55 percent of the savings were in aviation and jet fuel, 17 percent in ship fuel, 8 percent in electricity, 6 percent in natural gas, and lesser amounts in other fuels.



Energy use expressed as percentage of the 1,687,926,470 million total BTUs used by federal agencies.

During the current fiscal year, ten additional units of the Federal Government are submitting quantitative reports on energy consumption, bringing the total participants to 26. The new units are the Civil Service Commission, U.S. Postal Service, Panama Canal Company, Tennessee Valley Authority, Federal Power Commission, Federal Communications Commission, Interstate Commerce Commission, Small Business Administration, Civil Aeronautics Board, and the Office of Management and Budget.

Copies of the 1974 annual report may be obtained from: Press Room, Office of Communications and Public Affairs, Federal Energy Administration, Washington, D.C. 20461 (202-964-3538).

Energy Conservation By Federal Agencies

(FISCAL YEAR 1974)

Agency	*Projected consumption at fiscal 73 levels**	*Actual fiscal 74 consumption**	*Percent Saving*	*Percent of Total Gov't Use*
Defense	1,900,401	1,426,567	25	84.49
NASA	38,118	29,043	24	1.72
GSA	69,252	54,967	21	3.26
Transportation	25,810	20,699	20	1.22
Labor	1,818	1,450	20	.08
Veterans	32,910	26,734	19	1.58
Interior	13,594	11,250	17	.66
Agriculture	11,161	9,427	16	.55
Commerce	3,704	3,225	13	.19
HEW	8,218	7,285	11	.43
Atomic Energy	96,895	87,094	10	5.16
EPA	359	323	10	.01
HUD	449	411	9	.02
Treasury	3,319	3,029	8	.17
State	6.2	5.7	7	.001
Justice	6,834	6,414	6	.38
	2,212,848	**1,687,923**	**24**	**100**

* In billion Btu's

Assessed Property Value Rose By 22% In 1971-73

The assessed value of property in the United States subject to local property taxes rose by almost 22 percent between 1971 and 1973.

Commerce's Bureau of the Census reports that the 1973 net assessed value of $845 billion represents an increase of $150.4 billion over the $694.6 billion in 1971. Net amounts represent assessed value after deduction of portions exempt from local general property tax.

A new 120-page special study presents tables and information on locally-assessed real property, tangible personal property, intangible personal property (stocks, bonds, securities, cash, mortgages, franchises), railroads and public utilities.

Copies of the State and Local Government Special Studies No. 69, "Property Values Subject to Local General Property Taxation in the United States: 1973" are available for $1.90 from the U.S. Government Printing Office, Washington, D.C. 20402, or from U.S. Department of Commerce District Offices.

Real Capital Expenditures On Plant, Equipment Likely To Dip In 1975

Businesses expect new plant and equipment expenditures to total $117.1 billion in 1975, 4½ percent above 1974, according to Commerce's annual survey. The estimated increase in 1974 was 12 percent.

These data are not adjusted for price changes. Since capital goods prices rose at an annual rate of about 11 percent during the first nine months of 1974, the capital expenditure figures for last year represent little if any real growth in investment, and the 1975 projection strongly suggests a decline in real growth.

Manufacturers expect spending to total $49.9 billion in 1975, a 9 percent increase over 1974, while nonmanufacturing industries expect a 1½ percent increase to $67.2 billion. Manufacturing industries planning sizable advances include: petroleum (28 percent), chemicals (27 percent), iron and steel (26 percent), and paper (14 percent). Smaller increases are planned by the nonelectrical machinery and nonferrous metal industries. Other major manufacturing industries expect lower outlays in 1975 than last year.

Nonmanufacturing leaders

Among nonmanufacturing industries, railroads and gas utilities expect large relative increases of 28 percent and 22 percent, respectively. Sizable increases are also expected in the mining and "other transportation" industries; the latter industry's figures reflect construction of the Alaskan pipeline. Electric utilities expect little change in outlays, following the 11 percent increase estimated for 1974. A decline of about 10 percent is expected by airlines, and smaller decreases are expected by communication and commercial firms.

The estimates are totals of expenditures for new plant and equipment in the United States based on the sample data. They are compiled from reports on a company basis and not from separate reports for plants or establishments. A company's entire capital expenditures are assigned to a single industry in accordance with the industry classification of the company's principal products.

Firms Report Substantial '74 Energy Savings

U.S. business firms made very substantial energy savings per unit of output in 1974 through voluntary conservation measures.

A Commerce Department survey reveals a 7.6 percent median energy reduction per unit of 1974 output among 247 reporting firms representing 35 percent of total U.S. energy consumed for manufacturing. The response represents about 20 percent of total national energy use.

"This outstanding performance demonstrates conclusively that industry is fulfilling its firm commitment to make a major contribution toward President Ford's goal to reduce oil imports by one million barrels a day by the end of 1975," Commerce Secretary Frederick B. Dent declared.

"These companies are some of the giants of American industry," Secretary Dent pointed out. "Not a single one reported increased energy consumption per unit of output during 1974 and over a third reported savings of more than 10 percent. Ten had savings of more than 30 percent.

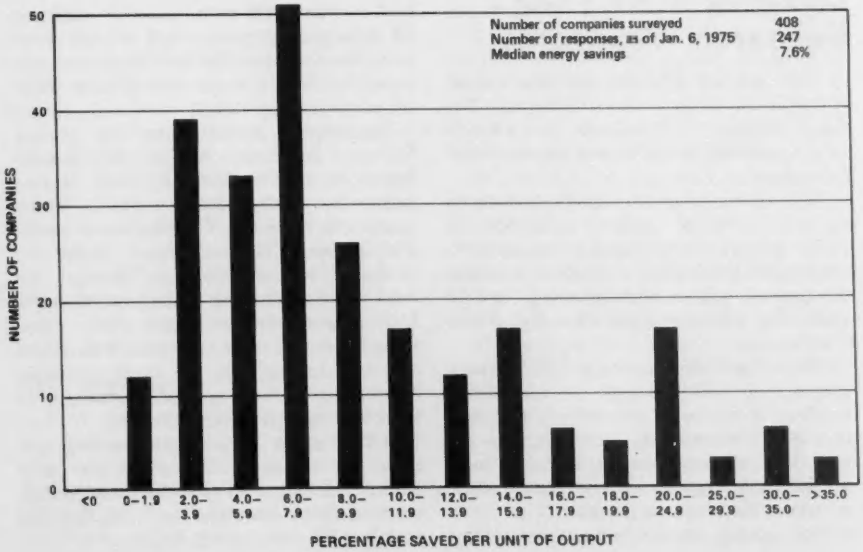
"We know that thousands of other firms, in the commercial as well as the industrial sector, are also making substantial contributions to the voluntary program."

Started before embargo

The survey also indicated that the business community had begun energy conservation efforts prior to the oil embargo of October, 1973. Reports from 200 firms showed a median energy reduction per unit of output of 4.8 percent in 1973 compared with consumption in 1972. Almost 20 percent of these saved 10 percent or more, and only one percent actually used more energy per unit product than in 1972.

The Commerce Department is supporting industry's voluntary energy conservation program through a wide range of tools to assist firms of all sizes. Motion pictures, pamphlets, and a major publication entitled "The Energy Conservation Program Guide for Industry and Commerce" are among the aids available to help in achieving energy conservation at the facility or plant level.

ENERGY SAVINGS BY BUSINESS FIRMS, 1974 OVER 1973 (9 MOS.)



Defense Petroleum Suppliers Must Have Written Contracts

A Federal Energy Administration emergency amendment to the Mandatory Petroleum Allocation Regulations requires suppliers of petroleum products to the Defense Department to enter into written contracts with the Department.

The emergency amendment—published in the Jan. 15 *Federal Register*—requires that each contract contain terms setting forth the volume, price, specifications, and delivery requirements of the petroleum products involved, and certain other clauses relating to cost and pricing data. The amendment also requires all Defense Department suppliers to provide the cost data prior to execution of a contract and to meet other requirements of the Cost Accounting Standards Board established under the Defense Production Act of 1950.

Although the amendment was effective when issued, FEA will hold a public hearing on the emergency amendment at 9:30 a.m., Feb. 5, in Room 3000, Federal Building, 12th St. and Pennsylvania Ave., NW., Washington, D.C.

SERVING THE CUSTOMER—*E & S Supermarket owners Edward Hunt (right) and his wife Shirley (inside cashier's cage) discuss meat packaging with their butcher.*

Supermarket Proves Super Venture For Baltimore Minority Couple

Edward and Shirley Hunt, minority entrepreneurs in Southwest Baltimore, Md., have been successful in the grocery business by providing top service to the customer. In their first venture 14 years ago they brought the groceries directly to their customers via a converted bus that served as a mobile store, manned by a driver, Hunt and an assistant.

Their success prompted them to put a second mobile grocery store, managed by Mrs. Hunt, on the road. But following a fire in the vehicle, which left her seriously burned, they decided to establish a fixed-location grocery store.

Their first effort was the acquistion of a High's Dairy Store franchise in 1965. In 1969, with the assistance of the Baltimore Council for Equal Business Opportunity, a local business development office of Commerce's Office of Minority Business Enterprise, they opened the Ebony Supermarket. Once again disaster struck, in the form of another fire, and the Hunts were forced to start over.

When they noticed that a supermarket in the suburban Cherry Hill Shopping Center—where their High's was located—was closing, they again consulted with BCEBO, acquired the vacant space and reopened it as the E & S Supermarket in 1972.

The council provides information, advice and business assistance to minority clients on entering or expanding their own businesses. During the past two years the Hunts have increased the store's weekly gross by 60 percent over the previous owners' operation.

The E & S and the High's together employ 36 people, both men and women, black and white. Hunt was named businessman of the year in 1972 by a local civic organization. The Hunts have been active in many local activities, especially those involving youth, such as sponsoring an annual contest in which youngsters are awarded bicycles and trips to Disneyland and Walt Disney World.

Catalog Lists NBS Research, Programs

A new catalog provides information on research and programs at Commerce's National Bureau of Standards, the nation's largest physical sciences and measurement laboratory.

The catalog provides complete citations on all technical papers published in 1973—papers that constitute a major end-product of the bureau's efforts to advance the nation's science and technology and to spur their effective application for public benefit.

The subject matter of the 1,083 papers ranges from basic research into the physical laws of nature to new information and standards on materials and processes involved in vital new areas of concern, such as pollution, product safety, energy conservation, housing and health.

The catalog carries full abstracts, key words, and easy-reference author and key-word tab indexes.

Sales and availability information are given not only for current NBS publications but also for those issued in former years and still valuable to the research scientist and engineer.

Publications of the National Bureau of Standards, 1973 Catalog: A Compilation of Abstracts and Key Word and Author Indexes, (NBS Special Publication 305, Supplement 5) may be ordered by SD catalog no. C13.10:305 Supp. 5 (Stock No. 0303-01240) for $4.15 per copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Proposed Rules Would Protect Marine Mammals

Commerce's National Marine Fisheries Service has proposed two new measures designed to reduce porpoise mortality or injury during commercial tuna fishing operations.

First, the Fisheries Service proposes to require training sessions for all commercial fishermen holding Certificates of Inclusion who use purse seines for catching yellowfin tuna. These sessions will ensure that the fishermen are personally aware of the provisions of the Marine Mammal Protection Act of 1972, regulations based on the Act, and methods they must use for protection of marine mammals.

Second, NMFS proposes to require that these fishermen use an additional porpoise rescue technique to free all animals that may have became entangled in the net. The additional operation provides that during and after the backing-down operation, two men are to be stationed in a small boat at the corkline in order to extricate all entangled porpoises and release them over the corkline. The two measures proposed by NMFS were due to take effect on or about January 1.

Regulations issued under the Marine Mammal Protection Act of 1972 require fishermen who incidentally take marine mammals during their normal fishing operations to obtain Certificates of Inclusion under a General Permit from the National Marine Fisheries Service. To meet the requirements of these certificates, U.S. commercial yellowfin tuna purse seine fishermen must take special measures and use special gear to avoid seriously injuring or killing marine mammals in their fishing operations.

NMFS plans to institute training sessions for affected fishermen in the near future. All fishermen who hold the certificates will be required to complete the training by the end of 1975.

Industry Highlights

Printing-Publishing Firms Expect Continued Growth

The printing and publishing industries expect to ship products worth $38.6 billion in 1975 and $53 billion by 1980. Activities of the 17 graphic arts industries range from publishing newspapers to producing recordkeeping equipment and supplies.

Commercial printing is the largest printing and publishing category, made up of plants which print a variety of materials for others. Commercial printing shipments are expected to exceed $12 billion in 1975.

Newspaper publishing still ranks as the largest single industry, with receipts expected to reach $10.8 billion in 1975.

Newspapers

Receipts from newspaper publishing are expected to exceed $10 billion for the year, an increase of 6 percent over 1974. Circulation growth will continue at the slow rate characteristic of this industry. Employment should reach about 390,000, up fractionally from 1974.

The number of dailies increased to 1,774 in 1973, 13 more than the previous year. Weeklies and others numbered 7,636, up 83 from 7,553 in 1973. Circulation rose to a record high of more than 64 million for dailies and almost 35 million for weeklies, up from 32 million.

Circulation of dailies for the period 1967-74 increased only about 3 percent. Evening papers registered a decline of 7 percent. Sunday circulation, by far the largest of the three classes, held steady during these years.

Advertising revenue continued to account for 75 to 78 percent of receipts by newspapers. Subscriptions and newsstand sales contributed the remainder. Newspapers still receive the largest share of U.S. advertising volume, 31 percent of the total $26.5 billion.

The switch from conventional letterpress printing to the newer web offset process continues. In 1973, over three-fourths of the 7,553 weekly, semi-weekly, and tri-weekly newspapers published in the U.S. were printed by offset. More than half of the nation's dailies are published by the same process.

Book publishing

Book publishing industry shipments are expected to increase by 7 percent to $3.4 billion in 1975. Sales of paperback books are expected to continue to rise rapidly through 1975. Paperback books in the combined categories of textbooks and general books will probably account for three-fourths of all books published in the next year. In 1967, the paperbacks' share was about half.

The market for paperback books continues to expand. Series publication, in which a group of standard novels is presented in a uniform format, instead of one at a time, is increasing. No longer is every best seller a reprint. The education market is expanding into study guides along with original textbooks for self-study and "minicourse" programs. Some publishers add sales with calendars, posters and coloring books.

Rising prices of books and the uncertainties of federal funding levels have resulted in more selective purchasing, sales of fewer books from backlists, and increased orders of paperbacks. Book publishers have been reducing title output, condensing backlists and screening manuscripts with extra care, and promoting paperbacks to meet the market needs of libraries.

Continuance of federal aid to community libraries and junior colleges has widened sales opportunities for trade reference and college textbooks.

Commercial printing

Receipts for all commercial printing next year are expected to climb 11 percent to approximately $12.1 billion in 1975.

The 22,000 commercial printing plants in the nation, reaping the benefits of high levels of economic activity during 1973, closed that year on a record high. Although the economy is now passing through a transitional period, demand for printed products continues strong.

Commercial printing receipts went up about 9 percent in 1974 to a total of about $10.9 billion by the end of the year.

In addition to potential problems of paper supply printers continue to be confronted with sharply rising costs from other suppliers. Delivered costs of pressroom chemicals, inks, plate metals, films and other materials necessary for graphic reproduction are now well over $3 billion.

The competition among processes for market leadership has now been won by offset printing. In 1972, $8.8 billion was spent on commercial printing—35 percent on letterpress, 55 percent on offset, and 10 percent on gravure and screen.

In 1963, offset printing, valued at just over $2 billion, accounted for 43 percent of total commercial work. The share of letterpress printing during this same time span declined from 49 percent.

Steadily increasing demand for high-quality, multicolor reproduction augurs well for gravure. The two major factors that may keep gravure just beyond the range of effective competition with offset printing are the high costs of press-ready cylinders and the inability to produce short runs economically.

Continued advances in letterpress technology still pose a threat to the leading position of lithography. Two equipment manufacturers are now offering a complete "book manufacturing system." These letterpress systems utilize flexible, photopolymer plates consuming a web of paper at one end of the machine, producing bound books at the other. Presently, the equipment is most effective on medium run, black-and-white books. The halftone quality is not yet comparable to offset, and process work is still in the future.

The commercial printing industry is expected to maintain a stable period of growth through this decade and enter the 1980s facing record high demands. Growing at an estimated annual rate of 8.2 percent through the 70s, the value of receipts of the commercial printing industry by 1980 will reach about $17.5 billion.

Manifold business forms

Business forms industry receipts of $2.1 billion are forecast for 1975, up 12 percent from 1974 receipts of $1.8 billion.

While manufacturers face increasing competition from sophisticated data transmission systems that bypass the business form as an input/output device, continued business growth and increasing use of computer systems will support future industry expansion. There remains a growing need among business firms for basic computer equipment that uses business forms to record, process, transmit, and store data. In particular, demand for optical character recognition (OCR) forms is expected to increase significantly during the next decade.

The product mix for business forms continues to be fairly constant. Continuous forms account for nearly two-thirds of the market; unit set or snap-apart forms nearly one-third. Sales books and similar forms make up the remainder, which is very small.

Business forms manufacturers, attempting to keep pace with competing technologies, continue to expand their product lines to serve the information handling market better.

This industry awareness, coupled with a growing business market for its products, will account for the 10.3 percent average annual increase expected in the next six years. By 1980, receipts will total an estimated $3.3 billion.

Spanish-Speaking Entrepreneurs Prosper With Advisory Unit's Aid

Most Americans don't want anyone telling them how to run their business, but close to 10,000 Spanish-speaking men and women are glad they asked the National Economic Development Association for help in running theirs.

NEDA is a business development organization funded by the U.S. Department of Commerce's Office of Minority Business Enterprise. For a non-profit organization, it has been so successful helping others reap good profits that it is a success story in itself. Set up in 1970 to help Spanish-speaking businessmen, it wound up its fourth year with 98.6 percent of its clients healthily in the black.

"I think the success of NEDA," says President Jose Carlos Gomez, "is due in part to having an independent board composed of successful businessmen from all over the country who donate their time, and the hiring of qualified personnel in all of our offices."

Gomez, a successful Chicago businessman himself, served on NEDA's original board and was elected chairman twice before being named president. He points out that six of the Los Angeles office's nine staff members hold master's degrees in business administration and a seventh a master's in economics.

"Few corporations," says Gomez, "have the kind of qualified personnel we have on our staff."

NEDA's record of success is impressive, compared with that of small business in general. Dun and Bradstreet estimates that 65 percent of all small businesses fail before their fourth anniversary. Despite its progress to date, NEDA's leaders realize that a successful beginning does not assure sustained success, and for this reason the organization continues to provide the Spanish-speaking businessman technical advice for as long as both deem it necessary.

NEDA was organized at the insistence of Spanish-speaking groups who urged the federal government to do something to help their people succeed in business. Its leaders felt that economic development was the fastest way the Spanish-speaking minority could achieve inclusion in the American society.

NEDA now has a total of 21 offices in 11 states and Puerto Rico, and has expanded its services to become a full business consultant organization.

As of last September 30, NEDA had helped 9,970 businessmen obtain over $530 million in loans to start or expand their businesses.

Calendar For Businessmen

Feb. 4—New York—Morning and afternoon metrication seminars, First National City Bank, 399 Park Ave. Sponsors: Commerce's New York District Office, 13 organizations and institutions. For information, 202-264-0621.

Feb. 10-13—Washington—Third Symposium on Meteorological Observations and Instrumentation, Washington Hilton Hotel. Sponsors: American Meteorological Society, others. For information, James Giraytys. 301-427-7468.

Feb. 10-13—Chicago—3rd Computer-Aided Design and Computer-Aided Manufacting Conference and Exposition, Hyatt Regency O'Hare Hotel. For information, CAD/COM III, Society of Manufacturing Engineers, 20501 Ford Road, Dearborn, Mich. 48128. (313-271-1500.)

Feb. 10-14—Chicago—Structural Foams seminar, Ambassador Hotel. Sponsor: School of Continuing Education, New York University. For information, SCENYU, New York Management Center, 360 Lexington Ave., New York 10017. (212-953-7266.)

Feb. 13—Baltimore—The 1975 Admiralty Forum, Holiday Inn Downtown. Sponsor: Federal Bar Assn. For information, Andrew Jay Graham, Esq., Semmes, Bowen & Semmes, 10 Light Street, Baltimore, Md. 21202. (301-539-5040.)

Feb. 14-19—Washington—World Meteorological Organization Conference on Automated Systems, Washington Hilton Hotel. Sponsors: WMO, American Meteorological Society. For information, James Giraytys, National Weather Service, W-141, 8060 13th St., Silver Spring, Md. 20910. (301-427-7468.)

Feb. 16-20—New York—104th Annual Meeting of the American Institute of Mining, Metallurgical and Petroleum Engineers, New York Hilton and Americana Hotels. For information, AIME, 345 East 47th Street, New York 10017. (212-752-6800.)

Feb. 16-21—Dallas—Spring Gift, Jewelry and Housewares Show, Dallas Market Center. For information, Dallas Market Center, 2100 Stemmons Freeway, Dallas, Tex. 75207. (214-748-6832.)

Feb. 18—Nashville—Public Meeting on 1980 Census, Nashville Area Chamber of Commerce. For information, Commerce Memphis District Office.

Feb. 18-19—Dallas—Government Assistance to Small Business Conference, Fairmont Hotel. Sponsors: 12 federal agencies. For information, Small Business Administration, Multiagency Conference, 1720 Regal Row, Dallas, Tex. 75235. (214-749-7061.)

Feb. 18-20—Washington—Executive Secretaries and Administrative Assistants seminar, Georgetown Univ. For information, Betsy Girton, 202-625-3001.

Feb. 19—Memphis—Public Meeting on 1980 Census, Memphis Area Chamber of Commerce. For information, Commerce Memphis District Office.

Education Gap Is Narrowing For U.S. Blacks

A higher proportion of whites is still going to school longer than blacks in this country, but the gap is closing. If the pace of the past six years is maintained, blacks could draw even by the end of the 1980s.

The most recent Census Bureau figures on educational attainment show that 82 percent of white males 25 to 34 years of age and 67 percent of black males in the same age category have high school diplomas. The figures are for March 1974 and are based on an annual survey of the entire nation.

In contrast to the 15 percentage points separating the 25 to 34 year old black and white males in educational attainment in 1974, there were about 27 percentage points separating them in 1940 when 36 percent of white males 25 to 34 years and only 9 percent of black males had a high school education. The differential decreased by six percentage points between 1940 and 1968 and another six percentage points in the past six years.

A similar trend toward parity in educational attainment is shown in the figures for 25-to34-year-old females. In 1940, about 29 percentage points separated black women from their white counterparts in educational attainment, but by 1974 this difference had been cut approximately in half. By 1974, figures showed a differential of 17 percentage points in the educational attainment of white and black females, with 81 percent of white females and 64 percent of black females in that age group having high school educations. In 1940, 41 percent of white females and 12 percent of black females 25 to 34 years old were high school graduates.

U.S. Trade Share Performance Remains Strong In About Half Of World's Leading Markets

The 50 largest U.S. trading partners all reported increases in the value of their imports during the latest 12-month period for which data are available, generally September or October 1974. Two-thirds of these countries boosted imports by at least 40 percent from year-earlier values, as indicated in the accompanying table. At the same time, increases in purchases of U.S. products were also sizable but such steep rates of gain occurred in fewer countries.

Continuing the pattern observed in recent reports in this series, U.S. exporters improved or maintained their positions in about half the listed markets, mostly in the developing group. Among this country's ten major partners, the U.S. share expanded in only one and held even in another.

Reflecting the decline or slackening of business activity in virtually all industrial nations, the rate of increase in the volume of goods moving internationally has slowed. Although world prices of some commodities have fallen, upward pressures on most goods remained strong and have contributed importantly to higher import values. While the rate of increase in the prices charged by the organized petroleum producers has slackened, the effects of past boosts are apparent in the trade data. Recent statistics for several of the larger traders indicate that petroleum is comprising a growing portion of their imports.

To preserve continuity with previous reports, the trade data used here are expressed in U.S. dollars reflecting the exchange rates prevailing in each period. Non-dollar reserve assets are treated in the same manner. As a result, changes based on these dollar values are inflated (deflated) for countries whose currencies have appreciated (depreciated) relative to the dollar.

In Belgium, among the top ten traders, the U.S standing improved substantially as purchases of goods from this country climbed by two-thirds. Arrivals of a wide variety of these products advanced strongly during the 12-month period. The most notable was nonelectric machinery, particularly office machines, along with organic chemicals, textile products, soybeans, and aircraft. For Sweden, the share was unchanged, as imports surged by half from both U.S. and foreign suppliers.

Although Japan and Italy increased their imports from the United States by more than two-fifths, those from other sources climbed even more rapidly. Higher purchases of corn, wheat, soybeans, cotton, and chemicals contributed importantly to the U.S. sales gain in both markets. In addition, Japan increased its imports of coal and grain sorghums, while Italy reported larger arrivals of textile products and office machinery.

Both Switzerland and the United Kingdom stepped up their purchases of U.S. goods by 37 percent but the pace was surpassed by other suppliers, weakening this country's position. Much the same products contributed to the U.S. advance in each market—chemicals, electric machinery, nonelectric machinery, particularly office machines, and aircraft.

In France, imports of U.S. products climbed by one-third, buoyed by increased arrivals of animal feedstuffs, soybeans, coal, office machines, power generating machinery, and tubes, transistors, and semiconductors. Partly offsetting these gains were decreased imports of U.S. aircraft. Purchases from other countries, however, rose more rapidly than those from the United States.

Although the U.S. standing also deteriorated in Canada, the inflow of American goods continued to rise notably. Arrivals of automotive products climbed above their levels of the previous 12-month period, while those of coal, iron and steel, and aircraft also expanded substantially. Similarly, in Australia, competing suppliers did relatively better than American exporters, whose principal sales gains were in chemicals, aircraft, and power generating machinery.

Comparative U.S. export performance was mixed among the smaller developed countries. In Portugal, the U.S. position was boosted by increased imports of corn and aircraft and in Finland by machinery. This country's share also rose in Norway, Yugoslavia, and New Zealand. On the other hand, its standing was eroded in Spain where purchases of aircraft declined. Imports of corn, soybeans, and power generating machinery, however, increased. The U.S. position also weakened in South Africa and Denmark.

In the developing countries, the U.S. standing was generally strengthened. Mexico, this country's largest market among the less advanced nations, boosted purchases from the United States by more than half, moderately faster than from other suppliers. Contributing most to the steep gain were higher arrivals of corn, nonelectric machinery, and automotive parts and accessories.

Sharper increases in imports from the United States than from elsewhere were also noted in Morocco and Taiwan, where they more than doubled, and in Singapore and Hong Kong. Higher purchases of wheat provided the impetus in Morocco and also aided the U.S. advance in Taiwan along with soybeans, iron and steel, and nonelectrical machinery. At the same time, Singapore boosted arrivals of construction and mining equipment as well as tubes, transistors, and semiconductors. These components, together with cotton and plastics and resins, were also key factors in the marked rise in Hong Kong's purchases from this country. At the same time, the U.S. share increased strongly in India and Egypt. Conversely, in the Philippines and the Republic of Korea, the position declined despite significantly higher purchases of U.S. products.

As of Sept. 30, 1974, official reserves of the 50 leading trading countries listed in the accompanying table rose modestly to $162 billion from their level a year earlier. The limited net increase in holdings of these countries masks the huge shifts from oil importers to oil exporters now belonging to the Organization of

U.S. Trade In 1974

U.S. exports in 1974 reached $97.9 billion but imports went over $100 billion. A comprehensive review of the trade totals will be presented in the Feb. 17 issue.

World Market Report

The 50 markets shown below accounted for 92 percent of 1973 imports into all free-world markets and 91 percent of imports from the U.S.

Values in millions of dollars — Published quarterly

Importing country	1973 Imports			1974 Imports January through latest month				Import change in latest available 12-month period*		Reserves at end of third quarter	
	From world	From U.S.	U.S. share %	Latest month	From world	From U.S.	U.S. share %	From world %	From U.S. %	1973	1974
Germany, West	54,496	4,581	8.4	Nov.	63,603	4,887	7.7	+ 26	+ 19	35,251	32,534
U. K.	38,843	3,970	10.2	Oct.	45,316	4,297	9.5	+ 43	+ 37	6,382	7,188
Japan	38,347	9,280	24.2	Oct.	51,517	10,410	20.2	+ 69	+ 42	14,795	13,169
France	37,399	3,089	8.3	Sept.	39,045	3,056	7.8	+ 44	+ 33	11,223	8,518
Italy	27,797	2,304	8.3	Aug.	26,948	2,028	7.5	+ 60	+ 46	6,508	7,598
Canada	24,817	16,943	68.3	Nov.	31,445	20,483	65.1	+ 34	+ 29	5,720	5,809
Netherlands	24,742	2,122	8.6	Sept.	25,086	2,156	8.6	+ 43	+ 36	5,462	6,600
Belgium-Lux.	21,975	1,257	5.7	Sept.	21,668	1,491	6.9	+ 41	+ 67	5,212	5,159
Switzerland	11,677	737	6.3	Oct.	13,188	835	6.3	+ 47	+ 37	8,151	8,290
Sweden	10,625	705	6.6	Sept.	11,193	746	6.7	+ 48	+ 47	2,365	1,656
Spain	9,594	1,545	16.1	Sept.	11,256	1,795	16.0	+ 62	+ 50	6,635	6,457
Denmark	7,711	515	6.7	Oct.	7,815	467	6.0	+ 30	+ 25	938	768
Australia	7,654	1,718	22.5	Aug.	8,026	1,648	20.5	+ 74	+ 71	5,750	4,381
Austria	7,119	218	3.1	Oct.	7,521	214	2.9	+ 27	+ 13	3,279	3,090
Brazil	6,998	2,005	28.6	Sept.	10,169	(1)	(1)	[2]+ 46	[2]+ 50	6,462	5,701
Norway	6,238	386	6.2	Oct.	6,893	560	8.1	+ 44	+103	1,578	1,809
Hong Kong	5,631	719	12.8	Oct.	5,725	796	13.9	+ 35	+ 52	(1)	(1)
South Africa	5,181	839	16.2	Apr.	2,237	357	16.0	+ 41	+ 38	1,637	1,148
Singapore	5,065	765	15.1	Aug.	5,290	762	14.4	+ 69	+ 89	1,209	[3]1,388
Yugoslavia	4,776	277	5.8	Sept.	6,025	320	5.3	+ 77	+108	1,413	1,296
Finland	4,323	203	4.7	Oct.	5,560	283	5.1	+ 54	+ 61	571	696
Korea, Rep.	4,240	1,202	28.3	Oct.	5,661	1,463	25.8	+ 68	+ 60	1,034	1,015
Mexico	4,146	2,605	62.8	Feb.	855	567	66.3	+ 46	+ 53	1,093	[4]1,251
Taiwan	3,779	954	25.2	Sept.	5,346	1,367	25.6	+102	+126	1,191	1,093
Greece	3,428	283	8.2	Aug.	2,798	228	8.1	+ 34	+ 42	1,128	988
Iran	3,370	473	14.0	Sept.	3,886	(1)	(1)	[2]+ 40	[2]+ 16	992	6,309
India	3,201	557	17.4	Mar.	1,415	175	12.4	+ 66	+116	1,320	1,341
Portugal	3,073	246	8.2	Sept.	2,615	253	9.7	+ 49	+ 70	2,767	2,499
Israel	2,987	565	18.9	Oct.	3,460	613	17.7	+ 39	+ 30	1,516	1,145
Ireland	2,789	192	6.9	July	2,261	137	6.0	+ 37	+ 17	1,081	1,175
Indonesia	2,347	442	18.9	June	1,745	304	17.4	+ 59	+ 63	917	1,589
Argentina	2,235	477	21.3	Feb.	383	68	17.9	+ 20	+ 29	1,213	1,519
New Zealand	2,181	263	12.1	June	1,618	203	12.5	+ 68	+ 82	947	355
Algeria	2,136	175	8.2	——	—	—	—	+ 45	+ 70	636	1,987
Turkey	2,099	185	8.8	Aug.	2,220	228	10.3	+ 64	+ 28	2,128	2,141
Malaysia, West	2,087	171	8.2	Mar.	760	(1)	(1)	[2]+ 52	[2]+ 40	[5]1,387	[5]1,520
Thailand	2,057	291	14.1	Mar.	745	88	11.9	+ 55	+ 30	1,254	1,771
Nigeria	1,876	191	10.2	July	1,334	(1)	(1)	[2]+ 25	[2]+ 22	445	4,019
Philippines	1,767	501	28.4	Sept.	2,594	614	23.7	+ 90	+ 83	867	1,535
Morocco	1,101	118	10.7	Aug.	1,215	134	11.0	+ 69	+156	332	398
Peru	1,026	306	29.9	June	691	214	31.0	+ 43	+ 44	571	[6]551
Pakistan	981	242	24.6	Sept.	1,244	308	24.8	+ 67	+ 61	404	570
Egypt	907	114	12.5	Mar.	173	18	10.3	+ 22	+ 88	256	[3]404
Trinidad, Tobago	778	124	15.9	June	762	80	10.5	+ 62	+ 6	46	255
Viet-Nam, Rep.	656	304	46.4	Sept.	631	408	64.7	+ 22	+ 55	192	[6]196
Ecuador	532	173	32.5	June	420	(1)	(1)	[2]+ 62	[2]+ 75	181	343
Panama	489	172	35.2	Mar.	174	(1)	(1)	[2]+ 12	[2]+ 13	1,551	[6]2,198
Costa Rica	455	160	35.1	Feb.	90	36	40.1	+ 28	+ 39	41	14
Guatemala	431	136	31.5	June	305	94	30.9	+ 53	+ 60	214	203
El Salvador	371	111	30.0	Mar.	122	(1)	(1)	[2]+ 33	[2]+ 46	77	75

Note: The countries shown above include the 50 major importers of U.S. merchandise in 1973 for which current data are available. In order to present comparable statistics for all countries, import data have been adjusted from an f.o.b. to a c.i.f. valuation for Australia, Canada, Philippines, and the Republic of South Africa. Reserves include official holdings of gold and foreign exchange, the gold tranche position, and Special Drawing Rights in the International Monetary Fund.

* Compared with preceding 12-month period. [1] Not available. [2] Import change from the year 1972 to the year 1973. [3] End of June. [4] End of August. [5] Includes East Malaysia. [6] End of December 1973.

Source: Official trade statistics of listed countries. International Monetary Fund, *International Financial Statistics*.

Petroleum Exporting Countries (OPEC).

The four OPEC members included—Iran, Nigeria, Algeria, and Indonesia—boosted their reserves to $14 billion, four times their level at the end of the third quarter of 1973. Offsetting most of these gains were widespread losses among the oil importing nations. The remaining OPEC members, particularly Saudi Arabia, Venezuela, Iraq, and Libya, also expanded their reserves sharply, but were not included in this report due to lack of current trade data.

Germany and France both reported reserve losses of $2.7 billion. In Germany, the decrease was attributable to open market operations in support of the mark in the fourth quarter of 1973 and again in the third quarter of 1974. In addition, during the latter period, Germany extended a $2 billion loan to Italy. The decline in French holdings occurred primarily in the final three months of 1973 due to heavy repayments to other central banks for their earlier support of the franc.

Japan recorded a drop in reserves of $1.6 billion over the period. The largest drawdown was in the fourth quarter of 1973 due to massive dollar sales by the Bank of Japan in support of the yen. Part of this reduction was offset by a sizable reserve increase in the second quarter of 1974 when inflows of short-term capital increased, outflows of long-term capital declined, and the trade deficit was reduced.

In Australia, a sharp deterioration in the trade surplus resulted in reduction in holdings of $1.4 billion over the 12-month period. About half the loss occurred in the third quarter of 1974 and led to a breaking of the fixed relationship between the Australian and U.S. dollars. At the same time, Sweden and Brazil had reserve declines in the $700-800 million range.

The Netherlands and Italy reported the largest increments in reserves among the developed countries as each gained $1.1 billion. The Dutch rise was recorded in the fourth quarter of 1973 when dollars were purchased from commercial banks to improve their liquidity and in the third quarter of 1974 due to open market operations in support of the German mark. Smaller losses in the intervening quarters partly offset these gains. Most of the Italian improvement was in the third quarter of 1974 following a sharp loss in the previous quarter and was attributable to the $2 billion loan from Germany, mentioned earlier, and substantial use of International Monetary Fund credits.

Despite a substantial trade deficit, the United Kingdom's official holdings rose by $0.8 billion. Most of the gain occurred in the second and third quarters of 1974 and was mainly due to official overseas borrowing.

Trade Fairs, Centers

Italian Drug, Cosmetic Industries Like U.S. Materials, Equipment

U.S. manufacturers of materials and equipment for the pharmaceutical and cosmetic industries are finding a significant and growing market for their products in Italy, despite the country's economic difficulties. This was demonstrated by the interest of Italian buyers who visited an exhibition of such items last fall at the U.S. Trade Center in Milan.

The show's success is an indication that the U.S. share of the market, especially in materials, will continue to increase both in percentage terms of total imports and in dollar terms. Exhibitors noted an across-the-board interest in materials and substances. Italian firms may be somewhat chary about investing their scarce capital in new production machinery but are eager to find new sources of badly needed supplies. Three new-to-market exhibitors showed three entirely different kinds of materials and supplies—raw materials for the cosmetics industry, fragrances and cosmetic intermediates, and bulk nail lacquer; all three reported excellent interest in their products, and the three predicted their 12-month potential sales at $1.25 million.

Although equipment and packaging were not as broadly represented as materials, visitors were attracted to the exhibitor who showed soft elastic gelatin capsules—both the finished product and the capital equipment. Two other exhibitors in the packaging field drew special interest with child-resistant safety closures.

Both the pharmaceutical and cosmetic industries are of primary importance in the Italian economy. Current predictions are that the market for pharmaceutical products will reach nearly $2 billion in 1976 and for cosmetic products, $650 million. With such a large and expanding end-user market, suppliers of both manufacturing equipment and supplies are insured a good demand for their products. Imports from the United States already have a considerable share of the market: 18.5 percent in materials, 13 percent in packaging equipment, and 18 percent in production equipment.

As reported in the Nov. 11 issue of *Commerce Today*, page 23, the 27 U.S. exhibitors reported on floor and projected 12-month sales of $7.8 million.

March Shows in Hong Kong

U.S. suppliers may be interested in exhibiting their products in two shows sponsored by the Hong Kong Productivity Centre this spring—automation equipment, March 8-14 and welding eqiupment, March 29-April 4. Write: Dr. L. T. Chan, Hong Kong Productivity Centre (Kwun Tong Branch), 4A Wai Yip Industrial Bldg., 171 Wai Yip St., Kwun, Tong, Kowloon, Hong Kong.

U.S. PRODUCTS AT MILAN SHOW—*Philip Siekman of Banner Gelatin talks about his company's soft elastic gelatin capsules during U.S. Trade Center exhibition.*

U.S. Exhibition Results In Brief

The following summary reports have been received on U.S. overseas commercial exhibitions. Further details and marketing data will be published as available.

TECHNOMIN '74, **World Mining Fair. Lima, Nov. 3-12.** Exhibitors, 51. Floor sales, $4 million; 12-month projection, $23.6 million. Agents, distributors appointed, 14; under negotiation, 6, plus representations for Ecuador, Chile, Bolivia and Venezuela.

U.S. Business Equipment Exhibition. Melbourne, Australia, Nov. 18-22. Exhibitors, 37. Floor sales, $1.5 million; 12-month projection, $10.5 million, of which $528,000 is represented by a new-to-market firm.

High Performance Materials Exhibition. U.S. Trade Center, London. Dec. 2-6. Exhibitions, 20. Floor sales, $108,648; 12-month projection, $6.8 million, of which $7 million projected by new-to-market firms. Representatives appointed, 3; agreements under negotiation, 23.

Pollution Control Equipment Exhibition, U.S. Trade Center, Stockholm. Dec. 9-13. Exhibitors, 34. Floor sales, $13,900; 12-month projection, $3.9 million, of which $3.3 million is estimated by new-to-market or -export firms. Representatives appointed, 6; under negotiation, 4.

Avionics and Airport Support Equipment. U.S. Trade Center, Milan, Jan. 14-18. Exhibitors, 21, representing 27 U.S. firms. Floor sales, $52,000; 12-month projection, $16.5 million, with new-to-market firms anticipating sales of $.5 million. Representation agreements under negotiation, 12; joint ventures under negotiation, 3.

Participation Invited At Fair In Poland Next November

Municipal installations and equipment to maintain the environment will be the focus of KOMEX-75, the Poznan International Fair to be held Nov. 16-20. An associated symposium is being planned.

Equipment for collecting and disposing of refuse, maintaining public buildings, parks, roads, water supply systems, and controlling water purification and sewage treatment stations will be among the items displayed. Also, interest has been expressed in complete plans and new techniques for water and waste water treatment.

Firms interested in participation should write: Management of the Poznan International Fair, KOMEX-75, ul. Glogowska 14, 6-734 Poznan, Poland, no later than June 30, 1975. Telex: 0415210 TARG PL.

Food Machinery Show Planned

An exhibition of U.S. Food Processing and Packaging Machinery, "PROPAK USSR 75," will take place in Moscow Oct. 15-24.

Information on this show is available from the organizers: PROPAK USSR 75, Inc., 1747 Pennsylvania Ave., NW., Washington, D.C. 20006, phone 202-872-1847.

U.S. Exhibitors At British Air Show See Market Despite Uncertainties

U.S. firms represented at Farnborough '74, an air show in Farnborough, England, were successful by and large, in forming useful contacts and making sales in their specialized fields — despite the unsettled picture the current aerospace industry presents. U.S. exhibitors' comments on good sales prospects reflect that Farnborough was an international show and provided wide exposure to the trade not just from the United Kingdom, but from a wide range of countries.

Major aircraft sales will perhaps be hard to come by for years to come, especially in civilian transport, but selected and specialized technologically advanced aerospace products can continue to be placed in the United Kingdom and international markets. Reflecting this essentially positive, though somewhat mixed, estimate of the market situation are the following representative evaluations elicited from USA Farnborough exhibitors:

Visitors displayed keen interest in a technique developed in the United States for titanium castings. Prospects for this product in the aviation industry in the United Kingdom and Europe are good. A German company placed an unusual order for 750 kilograms of titanium.

Numerous good inquiries developed regarding a microwave instrument landing system which had just been approved by FAA and also represented a 12-month lead on its competition in this area. Much interest was shown in aircraft engines, particularly a multi-purpose 600 horsepower gas turbine engine. A good potential was noted for high altitude, rapid decompression flight training chambers. Considerable interest was aroused in aerial reconnaissance systems with fine sales in prospect.

Other products displayed

Also, successfully exhibited were new-to-market lightweight man-transportable ground beacons. Excellent sales prospects developed for airborne navigation equipment. Numerous inquiries were made about miniaturized optimum-performance components for missile and space applications which were on display. Some leads were developed for satellite ground terminals, aircraft auto-tracking telemetry systems and CATV and cable communications.

The U.K. and European aerospace industries are in a time of considerable uncertainty, the U.S. Embassy in London reports. Aside from the selection of military aircraft, most of the uncertainties derive directly or indirectly from the rises in fuel prices during the past year and the consequently escalated costs associated worldwide with air travel and the aviation industry. British aerospace order books are alive and well in certain areas, but many observers predict that a viable future for the industry can only be found in further pan-European consolidation of firms to strengthen their financial, competitive and technological positions.

EDP Interest Holding Up In Britain, Data Communications Show Finds

The reputation of data communications as a growth area in Britain, despite the anemic state of many other sectors in the economy there, was amply borne out by the reception accorded to the London U.S. Trade Center's recent Data Communications Equipment and Systems show.

The U.K. market, probably the most technically advanced in Europe, is keeping pace with Continental demand—forecast for 25 percent annual growth over the next eight years.

Though new-to-market exhibitors expressed surprise at the degree of buyer interest, firms with experience in the United Kingdom acknowledged British leadership by showing equipment not seen before in Europe. An example was Teledyne Corporation's unveiling of a new terminal. TRW, on the other hand, gained new exposure to areas of application for its equipment not covered in the United States. Lundy Electronics and Systems found that half of its contacts at the London show led to specific peripheral sales activities that it could pursue.

Staged in a period of general business uncertainty immediately preceding the Labour government's fall budget, the exhibition gave British buyers a broad spectrum of equipment and systems to choose in terms of the country's communications future. The government's October decision to delay conversion to a high-speed digital system, and increasing U.K. business pressure for specialized private-line service, signal a growing demand for equipment that will maximize the capabilities of a conservatively managed national network. With Britain's data communications market projected to rise as high as $750 million by 1982, U.S. suppliers will continue to find U.K. sales important of themselves, as well as useful stepping-stones to the total EEC market.

As reported in *Commerce Today*, Nov. 25, page 23, floor sales by the 58 exhibitors totaled $2 million, and sales during the next 12 months are estimated at $25.5 million.

Texas Mission Expects Near East Business

Responding to a direct invitation from a Kuwait business leader, a group of Texans recently formed a trade mission to the Near East and returned with significant progress toward transactions in the $25 million range.

The mission stopped in Cairo on the way to Kuwait to explore the possibilities of combining the resources of Egyptian industrial skills, Texas technology and Kuwaiti capital. They met with the Egyptian Ministers of Economic Cooperation, Agriculture, Industry, Housing and Tourism and reported full and candid discussions on Egypt's industrial, commercial and construction programs.

In Kuwait the group held consultations with high level officials. Their host was Abdulrahman al-Shaya, who had traveled to Austin, Texas, last summer to suggest the mission visit.

The six firms represented on the mission were suppliers of such goods and services as building materials, internal combustion engines, electric generators agricultural technology, property management, and engineering and construction. Director was James Havey of the Texas Industrial Commission, which organized the group with the approval of the U.S. Department of Commerce.

One member, George Feaster, president of Western Beef, Inc., typically reported tremendous interest in beef, mutton, poultry, dairying and other farm development as he received "a great deal of attention from significant governmental officials in Egypt and Kuwait." He expects to complete a major business venture in the Near East by midyear.

Another member, John Chadwick of the North Texas Commission, termed a further mission by Texas businessmen to the Near East in the near future a "must."

Iceland Fair In August

U.S. firms are invited to exhibit consumer goods—such as household appliances, foodstuffs, cosmetics, toilet goods, art/design goods—at the International Fair in Reykjavik Aug. 22-Sept. 7. Summer homes, heavy machinery such as construction equipment and agricultural tractors, and automobiles and airplanes will be exhibited at outdoor facilities. Write: Kaupstefnan—Reykjavik Ltd., P.O. Box 504, Reykjavik, Iceland.

WORKING AT WORD PROCESSING—*These machines represented a product category that drew interest at the recent U.S. Business Equipment Exhibition in Melbourne.*

U.S. Business Equipment Producers Find Australia Demand Still Strong

Demand for U.S. business equipment remains strong in Australia. A recent exhibition of such products in Melbourne, organized by the U.S. Trade Center staff in Sydney, reported immediate sales exceeding $1.5 million. In addition, the exhibitors estimate their sales in the next 12 months at some $10 million.

Many companies are rethinking their requirements in light of the modern, automated office equipment now available. A feature of the exhibition was the emphasis on total systems rather than on individual pieces of gadgetry. Minicomputers capable of handling a wide range of peripherals, programmable calculators, word processing equipment and microfiche management systems all attracted strong interest. This reflects the trend toward increasing automation to save costs in such high-clerical-salary countries as Australia where wages and supplements are rising rapidly—by 31 percent last year.

Australian imports of business equipment totaled $156 million in 1973 and are growing by 15 to 20 percent annually. The U.S. share has been about 34 percent, and continual exposure of existing products and systems is essential if this share is to be increased. The exhibition also served as a promotional vehicle for the introduction of new products by a number of exhibitors.

Trade sources report that U.S. equipment is recognized as being technologically superior, and the U.S. should remain the leading supplier to the Australian market as long as U.S. exporters continue with strong promotional efforts, rapid delivery, good back-up service, and total systems marketing. U.S. exporters will face growing and determined competition from such countries as the United Kingdom, West Germany and Japan.

EEC, EFTA Modifying Rules Of Origin System

Minor modifications have been made in the rules of origin system used jointly by member countries of the European Economic Community and the European Free Trade Association.

Rules of origin define what products are eligible for preferential duty rates (duty-free by January 1977) when traded between the EEC and EFTA countries and within the EFTA. The new changes are generally liberalizing in nature, to keep abreast of manufacturing techniques and current trading conditions.

About a third of the changes affect textiles and apparel. Also affected are articles of lead, miscellaneous chemical products, some glassware, mircophones, loudspeakers, radio and TV apparatus, chairs and other furniture of base metal. Details are in the Nov. 25 *Official Journal of the European Communities,* available from European Community Information Service 2100 M St., NW., Washington, D.C. 22017.

The U.S. is among several countries consulting with EEC and EFTA members regarding these rules, which particularly affect manufacturers and exporters with European subsidiaries. U.S. firms experiencing difficulties should contact: Office of International Trade Policy, U.S. Department of Commerce, Washington, D.C. 20230, telephone 202-967-2619. A complete description of the EEC/ETA rules of origin system is found in the Commerce Department's Overseas Business Report 74-04 entitled "EEC and EFTA Ruels of Origin Governing Preferential Trade."

Hungary Clarifies Office Permission

Foreign firms are allowed to open their own offices in Hungary under a new foreign trade law that went into effect Jan. 1.

A decree of the Hungarian Foreign Trade Ministry has clarified the "exceptional circumstances" under which such offices are permitted.

The decree provides that a foreign firm may establish direct commercial representation in Hungary if it obtains prior permission of the Ministry of Foreign Trade. The formal means of requesting permission to open an offiice is an application to the Ministry, which must be answered within a period of three months.

To open its own office, a foreign company must plan to conduct a significant volume of business in Hungary and must conform to existing Hungarian laws. In addition any such arrangements must be deemed to serve Hungarian interests by bringing in new technology or otherwise advancing the country's economic development.

The decree also extends the length of time foreigners may remain in the country and offers foreign companies a wide range of choices as to type of venture.

The first U.S. enterprise to take advantage of the new law is the First National City Bank of New York, which will operate an office in Budapest.

Seminar To Consider Legal, Commercial Sides Of Trade

The World Trade Institute in New York will hold a seminar on Legal and Commercial Aspects of International Trade Feb. 19-21, focusing on substantive areas of international sales transactions, international licenses, and international leases. Specific problems of negotiating and enforcing agreements with civil law countries, developing nations, Eastern Europe countries and other parts of the world will be examined.

Joseph M. Lightman, Deputy Director of Commerce's Foreign Business Practices Division, will be chairman.

Write: Registrar, The World Trade Institute, One World Trade Center, 55th Floor, New York, N.Y. 10048.

Worldwide Business Outlook

Oman's Oil Revenue Windfall Points To Prospects For Major U.S. Sales

The Sultanate of Oman, directly benefiting from world petroleum price increases, is making rapid progress toward its modernization goals. The country—located between Saudi Arabia and the Arabian Sea—should thus continue to grow as a market for American companies.

The following marketing summary is excerpted from the first Economic Trends Report prepared for the Department of Commerce by the U.S. Embassy in Muscat. A special report from the U.S. Charge d'Affaires there appeared in the June 24 issue of *Commerce Today*.

Government revenues in 1974, almost entirely derived from petroleum, nearly quadrupled over 1973 receipts, permitting a vastly expanded level of activity. Export revenues, equally dependent on oil, have risen to a similar extent.

The overall level of income and product has risen a lesser but nonetheless remarkable amount, in part because slightly more than half of Oman's GNP is attributable to the petroleum sector, but also because of stimulatory effects, notably in construction, trade, and government services.

As might be expected, such vigorous activity has been accompanied by a high rate of inflation, around 25 percent, arising from massive injections of capital into a market as yet ill-prepared to receive it, and supply and demand rigidities, and exacerbated by rising world prices.

Rapid revenue increases have not yet resulted in either a fiscal or a balance of payments surplus. Income increases so far have been absorbed successfully by a rising living standard, a large backlog of infrastructure and development projects in a country only recently embarked on the path to modernization, and the desire to enlarge and upgrade the country's defenses, partly in response to a simmering guerilla rebellion in the southern portion of the country. Current Oman Government planning calls for a fiscal surplus in 1975, with revenues of $941 million and expenditures of $835 million.

The petroleum sector is likely to assume an even larger proportion of the national product in the near term. Output should increase from its late 1974 rate of 296,000 barrels per day to about 390,000-400,000 barrels per day by the end of 1975. This increase arises from the development of four new fields discovered in 1973, to be brought onstream by the completion of an 80-kilometer, 20-inch feeder line early in 1975.

Over the next five years or so, most observers expect other modest discoveries, fields in the range of 30,000 b/d. Two companies new to Oman, headed by ELF/ERAP from France and the American Sun Oil Co., soon will begin offshore exploratory drilling. Other companies are expected to bid on 36,000 square kilometers of ceded concession areas in early 1975. If successful, these companies will join the country's sole producer at present, Petroleum Development (Oman) Ltd., in which Shell is the largest private holder and the government has a 60 percent interest. Barring a major find, petroleum production will begin to decrease somewhere near the end of the decade as older fields begin to be depleted.

Development of gas resources

One major resource derived from oil production activities, associated natural gases, is now being used solely in connection with field activities, with a substantial portion being flared. Two companies were awarded contracts to develop this resource, in joint ventures the majority of which will be owned by the Government of Oman. Gazocean of France is planning a $400 million project to construct a pipeline and an ammonia/urea plant, to be used in producing 2,000 tons of fertilizer per day. At the same time, Tesoro Petroleum of the United States is working on a $100 million project for construction of facilities for production of liquefied petroleum gas (LPG). Both agreements also provide for marketing these products.

Futhermore, development of gas resources should permit subsidiary utilization of natural gas energy and products in a myriad of local applications. Thus, the bounty reaped from petroleum products will continue to be the backbone of the Omani economy far into the future.

American enterprises have been closely associated with Oman's growth and development from its beginnings. Oil service companies, particularly Williams Brothers International and Halliburton, Inc., continue to provide their special and sometimes unique expertise to this vital sector, most recently in constructing the feeder line from the new fields to the main pipeline.

More recent major American contributors to Omani development have come in the fields of petroleum, agriculture and fisheries. Sun Oil and Tesoro Petroleum have already been mentioned. The Houston-based firm of Marshall Exploration, which holds a 100,000-square mile concession under joint venture terms with the Oman Government, is largely responsible for the copper and other metallic mineral findings. FMC corp. has established demonstration plots and production facilities for dates, fruits and vegetables, livestock and poultry in a number of locations throughout the country. This company is also working in conjunction with Del Monte and California-based Mardela International to assess the country's marine resources as well as introduce modern methods of fish catching, handling, storage and processing.

Oman is turning to American technical expertise in a growing number of areas. Pan American Airways now manages the country's international airport, while its subsidiary, Intercontinental Hotels, provides construction supervision for and will manage what will be the country's largest hotel.

Three American firms have been selected by the UNDP and IBRD to provide assistance to the Government of Oman: Marine Buckley Associates, of Washington, D.C., in port management; IRI Associates, New York, in agriculture; and Louis Berger & Co., of Beltsville, Md., in highway construction. Teleconsult of Washington, D.C., meanwhile, has been selected by the Oman Government to provide engineering supervision on construction of a satellite relay station.

Oman has attracted growing interest from American banking. Already participating with minority interests are First National City Bank, Bank of America, and Chase Manhattan. They are expected to be joined soon by Morgan Guaranty, through Bank el Mashrek of Lebanon. At the same time both Chase Manhattan and First National City Bank hope to open wholly-owned subsidiaries in the near future.

While still modest, U.S. merchandise exports to Oman have been growing very rapidly. The $10 million in U.S. goods sent to Oman in the first six months of 1974 equals the amount sent during the entire year of 1973. U.S. firms have become major suppliers of heavy construction equipment, oilfield equipment and air-conditioning equipment, while their importance is growing in transport equipment and spares, foodstuffs, and appliances.

Prospects are improving for American suppliers of the following goods: agricultural equipment and supplies, medical supplies, building materials, home furnishings and fixtures, and primary wood and metalworking equipment.

Nigerian Ports Congested

Congestion at Nigerian ports is slowing shipments in and out of the country. Traders must allow for the following delays (as of Jan. 20) in addition to normal shipping times: Apapa import, 55-60 days; Apapa export, 3-5 days; Apapa lighter, 15-20 days; Lagos customs quay, 25-30 days; Port Harcourt, 14-15 days.

Bahrain Seeks Further Recognition As Regional Trading, Service Center

Bahrain is benefiting fully from the regional boom in the Arabian Gulf; both the public and private sectors of its economy are expanding at an unprecedented rate. As American business activity in the oil-rich Gulf area expands, Bahrain is the logical first spot to investigate as a base or headquarters for operations in the entire region. In addition, Bahrain is a choice location for traveling regional representatives of banking, investment, or construction and other companies with significant potential interest in the area.

This view of Bahrain as a center for regional commerce was excerpted from the first Economic Trends Report sent by the U.S. Embassy in Manama to the Department of Commerce. It supplements an article by the U.S. Ambassador to this strategically located island country of the Gulf, published in the Aug. 5 issue of *Commerce Today*.

New construction is visible everywhere and government officials as well as private businessmen reflect the general feeling of optimism. With increased business activity and an abrupt rise in government oil revenues, Bahrain is suddenly no longer short of public and private development capital. In fact, in the coming years Bahrain may well find itself with short-term surpluses of public funds from time to time.

Bahrain's major economic problem at this time is inflation. In addition to worldwide price increases, literally everything is now in greater local demand, driving prices up even further. While consumer price statistics are not presently kept by the Government of Bahrain, the impact of inflation is painfully obvious. Construction materials are among the items hardest hit. The government has embarked on ambitious programs of subsidizing basic consumer commodities and is intensifying efforts to construct housing for low and middle-income families.

While Bahrain is not likely to suffer any major disruption of its economy in the near future, oil income may peak next year. Crude oil production is declining and Bahrain must look forward to the day when oil reserves are depleted. Income shared from Saudi Arabia's Abu Safa field will soften the blow.

Another method of making up for decreasing oil revenues is to expand on Bahrain's traditional position as a regional trading and service center, the result of years of capitalizing on relative human and geographic advantages. Other richer countries in the area are now eager to duplicate Bahrain's service infrastructure. While Bahrain's relative importance may be challenged, its economy will still benefit from a healthy slice of a rapidly growing regional pie.

Bahrain also looks to industrialization as a means of diversification, with emphasis on energy-intensive industries. However, even Bahrain's substantial reserves of unassociated natural gas are finite and any new use of natural gas will be thoroughly studied, weighing proposed consumption against reserves. Perhaps more critical is the present and projected shortage of local labor, which puts severe limitations on Bahrain's ambition to industrialize.

As a result of increased oil revenues, the Government of Bahrain now finds itself in the position of being able to go through with many planned projects.

The devaluation of the dollar combined with inability of traditional suppliers to quote acceptable delivery dates has helped make the United States the principal source of imports to cost and quality-conscious Bahrain. As Bahraini merchants become increasingly familiar with U.S. sources of supply, the Embassy expects U.S. exports to continue to grow.

Individual American suppliers, however, cannot expect to reap the benefit of this trend without a willingness to develop an ongoing relationship with Bahrain's merchants. A visit in person with adequate prior research and serious specific proposals is, of course, the best means of establishing business relationships. If this is not possible, correspondence provides a substitute. Merchants in Bahrain would prefer to deal with an individual rather than an anonymous corporate structure, and they prefer to be contacted by an American employee of the American supplier.

Key areas of opportunities for expanded U.S. exports are automobiles, heavy machinery, chemicals, materials handling equipment, and foodstuffs.

American firms are actively sought as bidders on local projects, although presently few U.S. consultants or contractors are represented. It is not necessary to have a local agent in order to submit a bid; however, successful tenderers are expected to make arrangements with a local firm. In the foreseeable future, the areas in which U.S. contractors would have meaningful specific opportunities are port expansion, causeway, dry dock, housing, hotels, water and sewage systems. Consultants are in ongoing general demand in the following areas: housing, desalination, and a cultural center.

The Government of Bahrain encourages foreign firms to set up businesses. Under existing regulations there are few restrictions on registering a company. It is government policy to require at least 51 percent local participation for a firm locally incorporated; for a branch office a sponsor is required. As a matter of policy the government offers incentives to local and foreign companies. For example, investors can lease land in the free port industrial area on concessionary terms; raw materials and products are exempted from customs duties if the goods manufactured are exported. Capital equipment is usually exempt from customs duties. There are no corporate or personal income taxes and no restriction on convertibility or repatriation of capital or profits.

The major opportunities for American industrial investment appear to be: For the local market, manufacturing or repair and maintenance related to ship repairs; for the regional market, servicing and distribution of equipment used in the oil industry; and manufacture of aluminum and plastic products, particularly for the housing industry.

Canada Cuts Tariffs, Makes Tax Changes

The Canadian Government's reinstatement of tax cuts averaging five percentage points affects many consumer items of interest to U.S. exporters. Also, certain changes in Canadian taxes apply equally to imports.

Approximately two-thirds of the temporary tariff reductions of Feb. 20, 1973, which expired on June 30 (see April 2, 1973, and March 4, 1974, issues of *Commerce Today*), have been reinstated until June 30, 1976.

Products to which the cuts apply include: canned meats, prepared cereal foods, biscuits and pretzels, frozen vegetables, tomato and pineapple juices, soups, film, pharmaceuticals, perfumes and toilet preparations, soaps and washing preparations, tableware and kitchenware, typewriters, vacuum cleaners and carpet sweepers, power lawn mowers, certain hand tools, bicycles, fishing gear, light fixtures, cameras and projectors, certain sporting goods, phonograph records and tapes, tires and tubes, and pens.

The changes in Canadian domestic taxes include reduction in the 11-12 percent sales tax on building and construction materials to 5 percent; elimination of the 12 percent sales tax on clothing and footwear; introduction of special excise taxes on high energy-consuming motor vehicles and boats; and increases in excise levies on liquor, wines, and tobacco products.

More specific information regarding these actions may be obtained from the Office of International Marketing, Room 4002, U.S. Department of Commerce, Washington, D.C. 20230, telephone 202-967-2346.

International Business Reports

Policies and Operations: The World Bank Group. September 1974. 112pp. Free.
An explanation of the basic purposes, policies, organization and operations of the three international financial institutions that make up the World Bank Group—the World Bank itself (formally, the International Bank for Reconstruction and Development), and two affiliates, the International Development Association (IDA) and the International Finance Corporation (IFC).

Write: Publications, World Bank, 1818 H St., NW., Washington, D.C. 20433.

Tariff Schedules of the United States Annotated, 1975 (TC Publication 706). $31.20 (add $7.80 for foreign mailing).
Contains the legal text of the Tariff Schedules of the United States, as amended and modified, together with annotations prescribing statistical information to be supplied on customs forms.

Write: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Encyclopedia of Latin America. Edited by Helen Delpar. 651pp. $29.95.
A reference work containing information on history, politics, economy, literature and arts of the region, in nearly 1,600 articles and biographies, alphabetically arranged. Articles range from surveys of such diverse topics as agrarian reform, armed forces, foreign investment, nationalism, population and women to precise definitions of frequently encountered words. Significant geographic features are also covered.

Write: McGraw-Hill Book Co., 1221 Avenue of the Americas, New York, N.Y. 10020.

East-West Business Transactions. Edited by Robert Starr. 577 pp. $32.50.
Discusses ground rules for doing business with each of the Communist countries. Includes: Western legal controls; organization and conduct of foreign trade in state trading countries (East Europe, USSR, and China); East-West transactions (contract negotiation, property rights, financing, joint ventures, settlement of disputes).

Write: Praeger Publishers, 111 Fourth Ave., New York, N.Y. 10003.

Credit Manual of Commercial Laws. 1975. $22.
The 67th edition of this reference work is a layman's guide to important areas of commercial laws at both federal and state level. Changes made in commercial law in 1974 by 42 states and the federal government are covered as well as existing laws. Highlights include information on changes in age of capacity, usury laws, UCC filing fees and places of filing, mechanic's lien laws, collection agency activity and unauthorized practice of the law, state-by-state table on corporate usury defenses, bankrupt corporation and officer and employee personal liabilities, and recent legal cases.

Write: National Association of Credit Management, 475 Park Avenue South, New York, N.Y. 10016.

Principal International Businesses. Published by Dun & Bradstreet. 3,200pp.
Provides name and address, line of business, sales volume, number of employees, name and location of parent company in the case of subsidiaries, and name and title of chief executive officers for more than 43,000 firms in 132 countries.

Write: DunsWorld Thirteen, Dun & Bradstreet International, P.O. Box 3224, Church St. Station, New York, N.Y. 10008.

Nordisk Handelskalender (The Key to Scandinavia). 1974-75 edition. Two volumes. $26.
More than 135,000 addresses of business firms are contained in this directory, which covers Denmark (including the Faroe Islands), Norway, Sweden, Finland, and Iceland. Headings are in English.

Write: Nordisk Handelskalender, 15 Egegaardsvej, DK-2610 Rodovre, Denmark.

Calendar For World Traders

Feb. 4—New York—FCIB Round Table Conference on International Finance, Credit, Collection and Exchange Problems, Summit Hotel.

Feb. 5—New York—International Industrial Marketing Club luncheon meeting, Chemists Club. Eugene A. Theroux, vice-president, National Council for U.S.-China Trade, will speak.

Feb. 6 — Cleveland — Cleveland World Trade Assn. meeting, Mid-Day Club. Subject: Pending Trade Legislation. Speaker: C. H. Smith, Jr., Chairman, U.S. Chamber of Commerce and SIFCO Industries, Inc.

Feb. 6—Memphis—Mid-South Exporters Roundtable meeting, Monte's and Sons Restaurant.

Feb. 9—Glendale, Ariz.—Six-week Key Man Foreign Language Courses, Thunderbird Campus. For information, American Graduate School of International Management, Thunderbird Campus, Glendale, Ariz.

Feb. 10—New York—Beginning of spring semester for courses in international trade operations, World Trade Institute.

Feb. 10-11—Chicago—American Management Assn. briefing on How to Make Maximum Use of the Domestic International Sales Corp. (DISC).

Feb. 10-12—New York—Course in international technology transfer, American Management Assn.

Feb. 11—Louisville—Kentuckiana World Commerce Council meeting, Holiday Inn, Brownsboro East.

Feb. 13—Boston—International Center of New England meeting. Ivan Cosimi of Commerce's Office of International Marketing will speak on Near East Exporting.

Feb. 13—New York—Overseas Automotive Club luncheon meeting, Summit Hotel.

Feb. 13—Chicago—International Trade Club of Chicago luncheon meeting, Hyatt Regency Chicago. Speaker: Alfred F. Miossi, Exec. Vice-President, Continental Illinois National Bank & Trust Co. of Chicago.

Feb. 18—Memphis — Memphis World Trade Club meeting. Schlitz Brewery.

Feb. 19—New York—International Executives Assn. luncheon meeting, Summit Hotel. Nicholas L. Deak, Deak & Co., will discuss "All About Gold."

Feb. 20—New York—Far East/America Council meeting. Charles W. Hostler, Deputy Asst. Secretary for International Commerce, will speak on Asia-American Trade Relations.

Feb. 27—Birmingham—Alabama World Trade Assn. dinner, National Maritime Council Central Regional Action Group panel.

Feb. 27—Seattle—National Council for U.S.-China Trade conference, Washington Plaza Hotel. William Clarke of Commerce's Bureau of East-West Trade will speak.

March 5-7—New Orleans — 30th Mississippi Valley World Trade Conference.

March 6—Memphis—Mid-South Exporters Roundtable meeting, Monte's and Sons Restaurant.

March 6-7—New York — Briefing on China Trade Realities, World Trade Institute. William Clarke of Commerce's Bureau of East-West Trade will speak.

March 7—Kentucky—All-Kentucky Export Conference, Barren River State Resort Park.

Worldwide Business Opportunities

For more facts on these and other U.S. exhibitions write: Director, Office of International Marketing, Rm. 4015, U.S. Department of Commerce, Washington, D.C. 20230. For trade missons: Rm. 4219, U.S. Department of Commerce, Washington, D.C. 20230.

U.S. Promotions Abroad

Communications Equipment Catalog Exhibit. Beirut. March 3-7. Lebanon offers a potential market for communications equipment of more than $10 million. Increased buying is expected in the area of telephone equipment. Robert E. Peterson, 202-967-3973.

U.S. Exhibition, Cairo International Fair. March 10-31. The American Embassy is sponsoring a U.S. Exhibition at the Cairo International Fair featuring a variety of products and services aimed at the Egyptian market. Apply directly to Roger Merrick, Commercial Section, American Embassy, 5 Sharia Latin America, Cairo.

Shipbuilding/Port Construction & Maintenance Trade Mission. Iran & Pakistan. March 24-29. The Government of Iran is planning development of large commercial and military ports and is in the market for small boats. A maintenance equipment market exists, but will be considerably larger after implementation of the ports' expansion. In Pakistan, the Qasim and Karachi Port Trust is moving ahead with plans. E. Lee Carteron, 202-967-2973/4.

Mining Equipment and Services Trade Mission to Poland, Czechoslovakia, and Romania. April. Significant marketing opportunities are expected to result from this Mission. Participating U.S. companies will be recruited from the fields of mining engineering services, mine safety equipment, and strip mining apparatus and deep mining tools and equipment. Doug Harwood, 202-967-3741.

Railway Equipment Trade Mission to Nigeria, Zaire, Zambia, Botswana. April. Railroad rolling stock and equipment including maintenance, repair, service equipment, signaling, communications and electronics are among major categories of products and services urgently required to service, expand and build railroad systems. Herb Socks, 202-967-3846.

Health Care Industries Catalog Exhibit. Ethiopia and Kenya. April. Development plans for these two countries call for expenditures of over $23 million for various health programs in a wide variety of areas. Major emphasis is on construction of buildings and purchase of equipment for health centers and health stations; upgrading present facilities; improvement of hospital services, especially in the areas of surgery, x-rays, safe water, sanitation, dentistry and some in the area of cardiology. Money has also been allocated for special projects to combat communicable diseases and to improve public health. Robert E. Peterson, 202-967-3973.

Data Acquisition (Joint Export Establishment Program—JEEP). Frankfurt Trade Center. April 2-4. Germany's current market for data acquisition devices is $130 to $150 million a year with an annual growth potential of about 20 percent. The U.S. share is 50 percent and is expected to reach 60 percent by 1977. Contact Frank O'Connor, U.S. Department of Commerce District Office, 441 Stuart St., 10th Floor, Boston, Mass. 02116. Tel. 617-223-2312.

Hospital Equipment and Systems Trade Mission to Greece, Italy and Switzerland. April 5-17. U.S. goods have a price advantage over competitors. The following medical/hospital equipment should find a good market: clinical and research laboratory instrumentation, and cardiological-thoracic, neurological, pediatric, nephritic and general hospital equipment, especially nuclear medicine equipment. E. Lee Carteron, 202-967-2973/4.

Electronics Production and Test Equipment Tandem Exhibitions. U.S. Trade Center, Stockholm, April 7-11, U.S. Trade Center, London, April 15-18. Two consecutive exhibitions directed primarily to producers of electronic components in Sweden and the United Kingdom are now being offered to U.S. manufacturers of nonferrous metal mill shapes; production equipment for semiconductor integrated circuits, printed circuits, wiring assembly and other components; test instruments and equipment for production and/or inspection; parts and devices and passive components; and piezoelectric crystals including mounted filters and parts. Maurice Peter, 202-967-4256.

Building Construction Materials and Equipment Show and Sell Mission. Jidda, Riyadh and Dhahran. April 7-18. The some 20-25 participating firms will provide services covering the full range of urban development including contractors, community development firms, building manufacturers and material suppliers, engineering, design and architectural firms, and manufacturers of hand and power tools as well as light construction equipment. Franc Manzolillo, 202-967-5767.

Pollution Control Equipment Trade Mission to Belgium, Netherlands and Norway. April 7-18. Establishment of strict pollution control standards by each of these countries is creating considerable demand for air and water pollution treatment and recycling equipment, noise abatement and control equipment and measuring, monitoring, sampling and analyzing instruments. Doug Harwood, 202-967-3741.

Microelectronic Components (JEEP). Frankfurt Trade Center. April 8-10. Good sales opportunities exist for the following microelectronic components: integrated circuits, resistors, capacitors, diodes and rectifiers, transistors, optoelectronic couplers, photo-diodes and phototransistors. Contact Paul Lienenbach, U.S. Department of Commerce District Office, 11th Floor, Federal Office Bldg., 11000 Wilshire Blvd., Los Angeles, California 90024. Tel: 213-824-7591.

U.S. Consumer Goods Production. Tokyo Trade Center. April 9-12 and 16-19. The first promotion will present major electrical appliances, electric and nonelectric housewares and home furnishings. The second will essentially cater to recreation, sporting and leisure items, games, toys, books, magazines, writing instruments, precious stones and jewelry, cosmetics, perfumes and athletic wear. Revaluation of the yen, escalating costs, changing Japanese tastes towards western goods, and demand for a wider range of quality/brandname items are contributing to strong U.S. sales. Don Chambers, 202-967-2963.

The International Motor Show, Barcelona. April 12-22. Commerce will sponsor a U.S. pavilion at Spain's leading annual event for the automotive industry. Plans have been established by Spanish auto manufacturers to spend $1.1 billion by 1977 for new and improved production facilities. With the subsequent increase in the motor vehicle population, there will be a tremendously increased demand for service and repair equipment. Call William S. Gaines, 202-967-3957.

Laser and Electro-Optic Technology Exhibition. U.S. Trade Center, Paris. April 14-18. A laser exhibition in 1969 resulted in over $3 million in sales during the show and the following year. Since then, scientific and industrial need has grown rapidly. During 1975-1977, French industry and scientific organizations are expected to spend $39 million on lasers, mostly imported. Chuck Whitley, 202-967-5381.

U.S. Book Fair. Sydney Trade Center. April 14-18. Australian imports of books and pamphlets are approximately $85 million, with annual growth of 10 percent. The U.S. provides about one-third. American products have been competitive recently with revaluation of the Australian dollar. In addition, recent breakthroughs in the restrictive markets agreement allow greater openness in Australia. Don McDonough, 202-967-3646.

Hospital and Medical Equipment Catalog Exhibit at MEDICA '75. Utrecht, The Netherlands. April 14-18. The Dutch market for medical and hospital equipment is expected to reach $31 million by 1976, an increase of more than 60 percent over 1971's $19 million. Dutch medical institutions rely heavily on imports for medical, dental, and surgical equipment, medical instrumentation, veterinary instruments. Robert Peterson, 202-967-3973.

Franchising Trade Mission. Tokyo, Osaka and Fukuoka, Japan. April 14-25. Japan's rapidly growing economy favors the extension of franchising activities in the categories of fast food restaurants, automobile products and services, laundry and dry-cleaning services, hotels, recreation, and retailing. Call Wanda Lee Ale, 202-967-4511.

Educational Training Aids & Audio Visual Equipment Catalog Exhibition. Singapore and Malaysia. April 15-23. This event is designed to assist U.S. industry in developing and expanding sales in the Far East market. Exporters of this type of equipment have a growing market in Singapore; imports increased 74 percent over the 1972 level to $41.8 million in 1973. Overseas suppliers furnish approximately 80 percent of Malaysia's requirements for educational training aids and audio visual equipment. Robert E. Peterson, 202-967-3973.

Plant Protection Systems (JEEP). U.S. Trade Center, Tehran. April 20-22. The market for plant protection systems in Iran is expected to grow from $3.6 million to $21 million within the next four years. Many new plants are under construction or expansion, and managers are interested in seeing new developments in plant protection methods. Participation limited to new-to-market firms. Bill Welch, Detroit District Office, 313-226-3650.

MACH TECH—Machine Tools and Metalworking Equipment Exhibition. Taipei Trade Center. April 21-25. Taiwan's economy continues to expand at over 8 percent annually. The industrial sector is developing rapidly and requirements for metalworking equipment and machine tools are expected to increase at 15 percent per year, from $38 million in 1974 to $67 million in 1978. Harold Nelson, 202-967-4228.

Woodworking, Furniture Manufacturing and Timber Industries Equipment Exhibition. Zagreb Spring Fair, Yugoslavia. April 21-27. The timber and woodworking industries rep-

resent an important sector of the Yugoslav economy—accounting for 7 percent of total industrial output and 11 percent of total exports. Furniture manufacturing is one of the fastest growing and most successful industries there. The Yugoslav Government has accorded priority in economic planning for these industries. Beryl D. Cohen, 202-967-4508.

Road Construction Technology Seminar to Ivory Coast, Nigeria and Zambia. April 21-May 28. Market studies just completed in these oil and mineral rich countries point to extensive and massive transportation construction outlays. Equipment imports alone will reach $310 million in the 1975-1976 period. Fred E. Crosley, Jr., 202-967-5285.

Pollution Control Equipment. Frankfurt Trade Center. April 22-25. American manufacturers and suppliers of equipment for control of air and water pollution, noise abatement, sewage treatment and solid waste disposal have an excellent opportunity. In 1974 and 1975, the Federal Republic's annual investment in pollution abatement is anticipated at about $2.6 billion and $3.1 billion, respectively. Bill Dawson, 202-967-4941.

Process Control Instrumentation Exhibition. Manila. April 22-26. High sales potential exists in the Philippines for U.S. manufacturers of process measuring and control instruments and systems for measuring, recording, and controlling physical/chemical properties. Total consumption of such instrumentation rose from $1.7 million in 1970 to $2.4 million in 1973, a jump of nearly 30 percent. Consumption is expected to more than double between 1974 and 1978. Call Dave Horridge, 202-967-2798 or 5545.

U.S. Exhibition, Casablanca International Fair. April 24-May 11. A U.S. exhibition sponsored by the American Embassy will feature a variety of products and services aimed at the Moroccan market. Apply directly to: Joseph Fisher, Commercial Section, American Consulate General, B.P. 675, No. 8, Bd. Moulay Youssef, Casablanca. Limited background information is available from Robert Vigneault, 202-967-4304, or Laron Jenson, 202-967-5737.

Plastics Processing Equipment Catalog Show. Buenos Aires. May. The Argentine plastics processing industry consists of some 1,500 firms. Imports of equipment total about $1.2 million per year and are expected to grow at about 15 percent annually during the next five years. Robert E. Peterson, 202-967-3973.

Hospital/Medical Equipment (JEEP). U.S. Trade Center, Sydney. May 5-7. The medical equipment industry is one of the fastest growing markets for U.S. firms. Increased government spending in addition to monetary revaluations, make U.S. products very competitive, and most of Australia's requirements must be imported. M. R. Sherar, 317-633-4537.

U.S. Computers for Industry Trade Mission to Hong Kong, Taiwan, and Singapore. May 8-22. Market research has identified a range of computers and related products which offer sales potentials in these important markets. Ed Oliver, 202-967-3746.

Portable Power Tools (JEEP). U.S. Trade Center, Tehran. May 12-14. The $10 million market for pneumatic power and hand tools in Iran is expanding dramatically as Iran builds factories and houses for industrial workers and the burgeoning middle class. Limited to new-to-market firms. Felix Turel at Cincinnati District Office, 513-684-2944.

Telecommunications Equipment and Systems Exhibition, U.S. Trade Center, London. May 12-16. The United Kingdom is one of the largest primary and intermediate markets in the world for telecommunications equipment, subassemblies, and systems. The British market for telecommunications equipment in 1973 amounted to $1.1 billion; imports totaled $218.8 million—$39.1 million from the U.S. Call I. D. Nathanson, 202-967-3355.

Biomedical Equipment Exhibition. U.S. Trade Center, Mexico City. May 12-16. The Mexican market for imported biomedical equipment is expected to reach $21 million by 1976. This market is wide open to aggressive U.S. companies with interesting new products to sell. Mary Wiening, 202-967-5037.

Analytical Instruments for Science and Industry Exhibition. U.S. Trade Center, Tokyo. May 12-16. For 1974, the Japanese market for automated and computer controlled analytical instruments was nearly $50 million, some 37 percent of U.S. origin. The expected value of $78 million by 1976 represents an annual average rate of growth of 25 percent. Fred Groh, 202-967-2709.

Children's Fashions and Toys and Games (JEEPS). U.S. Trade Center, Paris. May 13-15. Sales prospects for U.S. sportswear are likely to get better as youth-led trends towards casual clothing continue. Interest is especially strong for styles that project the American look. An increased affluence and a generous attitude towards youth are factors which account for a surge in the market in France for toys and games. Contact nearest Commerce District Office or Anita Brownstein, 202-967-4504.

Airconditioning and Refrigeration Equipment Exhibition. Frankfurt Trade Center. May 13-16. This event will feature equipment for the commercial, industrial and residential markets. The current German airconditioning equipment market is estimated at about $301 million, of which about 22.5 percent or $68 million is manufactured in the U.S. By 1976 the market is expected to be about $458 million, of which $91.7 million will come from the U.S. The refrigeration market is expected to increase 5-8 percent annually. Don Schmadel, 202-967-2177.

Construction Equipment and Building Materials Exhibition. Milan Trade Center. May 16-21. The Italian construction industry ranks high internationally, with operations throughout the Mediterranean area, Africa, and elsewhere. U.S. products in many categories are now very competitive due to currency realignments and higher inflation levels in competing countries. This event runs concurrent with Cemento Expo, International Exhibition of the concrete industry at the same Fairgrounds. Peter Wilson, 202-967-2434.

Ship and Boatbuilding and Marine Equipment Catalog Exhibit. UAE, Iraq and Oman. May 18-26. Feasibility studies are being conducted and up-to-date equipment, more modern small ports, and improved communications will likely be a part of development. The present small U.S. share of imports of boats and marine equipment should grow in volume with increased modernization. Call Robert E. Peterson, 202-967-3973.

Textile Equipment and Cotton Ginning Machinery Trade Mission to Morocco, Egypt and Syria. May 19-June 3. These nations have plans to invest over $400 million in expansion of textile and cotton ginning industries between 1974 and 1977, over half representing foreign exchange expenditures. Morocco's Export Investment Code provides special incentives to new investment, which may be 100 percent foreign-owned in the textile industry and in industries ancillary to textile mills. Egypt is planning to invest nearly $90 million for imported cotton ginning machinery in the short-term. Herb Socks, 202-967-3846.

U.S. Advanced Business Equipment Exhibition. Budapest International Spring Fair. May 21-29. Hungarian officials have expressed high interest in advanced business equipment geared to mechanize and modernize office systems and administrative procedures. Principal equipment in demand includes: electronic calculators, accounting machines, microfilm systems, advanced model cash registers, copy and duplicating equipment, etc. Call Dick Bell, 202-967-2801.

Printing and Graphic Arts Equipment. Sydney Trade Center. May 26-30. This will be the third exhibition of the U.S. Trade Center for Australia. The Australian market for printing equipment has expanded from $33 million in 1972 to $54 million in 1974. Imports account for almost all of the market. U.S. exporters are in a good position to increase their share in the face of British and German competition. Don McDonough, 202-967-3646.

Hotel and Restaurant Equipment Exhibition. Stockholm Trade Center. May 26-30. Demand for U.S. equipment, especially that incorporating labor-saving features, is strong throughout the Scandinavian area—Denmark, Finland, and in particular Norway and Sweden, which are benefiting from high levels of economic activity. A complementary exhibition, sponsored by the U.S. Department of Agriculture, will feature processed food for the hotel, restaurant and institutional trade. William Beiring, 202-967-3276.

Technical Sales Seminar on Advanced Metalworking and Metal Parts Finishing Equipment. Yugoslavia, Austria and Spain. May 26-June 14. In response to strong and growing demand for American metalworking and metal parts finishing equipment in these countries, Commerce will arrange a seminar for seven American manufacturers. There will be seminar presentations in Dubrovnik, Yugoslavia; Vienna; and Bilbao, Spain, to discuss the state of the art in the U.S. and hold meetings with key managerial and technical personnel and discussions with purchasing authorities. W. Bradley Terrell, 202-967-5285.

U.S. Pavilion, Paris Air Show, Le Bourget Airport. May 30-June 8. The export market is the brightest spot in the U.S. areospace industry this year. In 1973 U.S. aerospace exports reached an all-time high of $5.2 billion, 27 percent of production. During the period 1968-1973, over 46 percent ($8.2 billion) of total U.S. exports ($17.7 billion) of civilian and military aircraft, engines and parts were shipped to Western Europe. Sales prospects for 1975 are particularly good for general aviation aircraft, helicopters, military aircraft for the NATO air forces, avionics and airborne instrumentation, aircraft engines and parts and airport and ground support equipment (with special attention on security equipment), and components. Michael G. Hanpeter, 202-967-4961.

Telecommunications Technology Seminar to Morocco, Algiers and Tunisia. June. Over $178 million will be allocated by governments of these countries for construction, expansion and modernization of telecommunications systems, according to current development plans. These countries have a preference for American technology and equipment. Emphasis will be on telecommunications and data transmission, including satellite communications, microwave transmission, data terminals and communications, mobile radio, and closed circuit and cable TV systems. Fred E. Crosley, Jr., 202-967-5285.

Business Equipment Catalog Exhibition. Lagos. June. A sustained rate of growth in sales of business equipment and systems should occur as Nigeria proceeds with numerous industrial and infrastructure developments made possible by increased oil revenue. Consumption of business equipment and systems is estimated at $9 million for FY 1975 and $12 to $15 million per year for FY 1976 and 1977. There is no local production of business equipment. U.S. exports of business equipment to Nigeria will

grow an estimated 11 percent annually. Robert E. Peterson, 202-967-3973.

Recreation and Leisure Equipment Exhibits. Paris Trade Center, June 2-5; Frankfurt Trade Center, June 10-13. The two leading markets of Europe—France and Germany—offer unusual opportunities for American manufacturers of sports items, photographic equipment and musical instruments. A leisure boom has occurred in both these countries as a result of the long-term economic development that has taken place. Increased incomes—the willingness to spend it—more free time from work—all are factors which are stimulating French and Germans to spend more on leisure products. Myra Triplett, 202-967-5381.

Electronic Industry Production and Test Equipment Exhibition. U.S. Trade Center, Tokyo. June 2-6. The market in Japan for this type equipment is buoyed by the rapidly expanding markets, domestically and worldwide, for the massive output of Japanese electronic goods—expected to reach $20 billion by 1975—and the requirements of Japanese electronic manufacturers for production and test equipment—estimated to reach $215 million by 1977, up 40 percent from 1973. In 1975 the Japanese Government intends to remove any restrictions on investments and imports of this equipment. Maury Shea, 202-967-2461.

Commercial and Industrial Security Equipment. U.S. Trade Center, London. June 2-6. Fire and crime security is one of the United Kingdom's important growth markets. The market for security devices is $320 million, split nearly evenly between fire and crime security. U.S. price levels for security equipment are above those for equivalent British products, but where products are suitable for a specific application this is unlikely to inhibit sales. Thus the United States is expected to continue as the leading supplier of imports in this field. Jim Lamont, 202-967-4543.

Minicomputers, Terminals and Peripherals Exhibition. Milan Trade Center. June 3-7. The minicomputer segment is the most dynamic growth area of the computer industry. Estimates for 1976 forecast an increase of 111 percent over Italy's 1973 import figure. Computer installations are now being better matched to the intended function. The market for terminals and peripherals is also rapidly expanding, since they are used both in new systems and in upgrading existing computer installations. Mara Yachnin, 202-967-4975.

Food Processing and Packaging Exhibition. U.S. Trade Center, Tehran. June 8-12. Iran is one of the fastest growing markets for capital goods. U.S. exports more than doubled in 1974 to a total of $1.6 billion. More than $4 billion has been allocated for 1973-78 for the means to increase food production in Iran. During this period the market for food processing and packaging equipment is expected to grow from $10 9 million to $45 million. Don Ryan, 202-967-4652.

Industrial Process Controls Exhibition. U.S. Trade Center for Scandinavia in Stockholm. June 9-13. U.S. manufacturers of industrial process controls will find a highly receptive market in the Scandinavian countries, where demand is projected to increase substantially in the next four years. High labor costs, expanding activity in petroleum and chemical industries, and buoyant export demand for paper products are spurring investments in advanced process control instrumentation and accessory equipment. The 4-country market, supplied mainly by imports, is currently estimated at over $100 million with a 15-20 percent annual growth rate foreseen through 1978. Robert J. Blake, 202-967-2797.

Do-It-Yourself Products (JEEPS). Paris Trade Center. June 11-13. Frankfurt Trade Center, June 18-20. The markets in France and Germany offer bright prospects to U.S. manufacturers and suppliers of do-it-yourself products such as portable power tools, hand tools, wall coverings, home remodeling and repair materials, lawn and garden equipment and other related equipment and products. Germany, with the lowest inflation in Europe, is the continent's wealthiest country and best customer for U.S. products. France, although having a high inflation rate, has had a larger real growth rate than Germany and has doubled its standard of living since World War II. The French and the Germans now have more money to spend and more leisure time. A continuing increase in demand for do-it-yourself products is foreseen. Contact nearest U.S. Department of Commerce District Office.

Construction, Building and Mining Equipment Catalog Exhibit at the 16th Annual Lisbon International Industrial Exposition. June 11-22. In order to modernize its economy and raise living standards, Portugal is aware that it must increase imports of capital goods. Major projects under consideration will require a wide range of machinery and equipment for heavy construction, mining, and housing including hardware and small hand tools. Robert E. Peterson, 202-967-3973.

Pollution Control Exhibition. U.S. Trade Center, Mexico City. June 16-20. The present Mexican Administration has made pollution control one of its highest priority programs. This federally coordinated pollution control program has increased demand for necessary equipment beyond earlier projected programs. Phil Christenson, 202-967-5038.

U.S. Recreation and Sports Equipment/Toys and Games (JEEP). Sydney Trade Center. June 17-19. Australian imports of these products totaled $120 million in 1973 and are forecast to grow by 10 to 15 percent annually. U.S. exporters are price competitive in many areas and enjoy the advantages of originality in design, quality, and variety in product lines. Inflation was 14 percent in Australia in 1973, 20 percent in 1974. Tariffs have been reduced, English competitors are losing tariff preferences, and imports are surging. T. Sunohara, 206-442-5615.

Household Textile Products (JEEP). Milan Trade Center. June 17-19. With a population of over 55 million and a relatively high per capita income of $2,550, Italy constitutes a large market for household textile products. Department store buyers have found that American items have strong appeal on the Italian market. Only U.S. firms not currently selling in Italy may participate. Ann Corro, 202-967-2434.

Kinshasa International Fair (FIKIN). June 21-July 6. A U.S. exhibition sponsored by the American Embassy will feature a variety of products and services aimed at the expanding Zairian market. Apply directly to: Ollie Ellison, Economic/Commercial Section, Am Embassy, Kinshasa, APO New York, N.Y. 09662. For limited background information, Robert Vigneault, 202-967-4304.

Air and Water Pollution Control Exhibition. U.S. Trade Center, Mexico City. June 23-27. The Mexican Government has passed stringent laws to control air and water pollution. The enterprising U.S. manufacturer who vigorously pursues this market will find it a gold mine. Phil Christenson, 202-967-5038.

Energy Systems Exhibition. U.S. Trade Center, Taipei. June 23-27. Continued industrial expansion on Taiwan, particularly in heavy and chemical industries, offers many opportunities for sale of pumps, valves, compressors, standby power generation systems, switches, transformers, and circuit breakers. Most must be imported; imports, over $50 million in 1973, are projected to near $80 million in 1976. Carol Murray, 202-967-2215.

Hospital and Medical Equipment Solo Exhibit. Caracas. June 24-28. Venezuelan Government health care programs are receiving vigorous impetus in the form of new hospital construction and expansion of public health service activities designed to considerably broaden the range of medical services available to the public. In addition, stricter regulation of public and private health facilities will create an immediate demand for the whole spectrum of biomedical products. Equipment purchased by the government and private entities is expected to run from $20-30 million in 1975 alone. Vicky Eicher, 202-967-4546.

U.S. Metalworking and Metal Finishing Equipment. Sydney Trade Center. July 7-11. Australian imports of metalworking equipment are forecast to double from $73 million in 1972 to $146 million in 1978. Two-thirds of the metalworking equipment used in Australia is imported and this trend is expected to continue. U.S. equipment is much more price competitive than in previous years, especially against German competition. Also, English exporters are losing tariff preferences. Don McDonough, 202-967-3646.

Ocean, Marine Instrumentation Exhibition. U.S. Trade Center, Tokyo. Aug. 4-8. Japan's small size and the virtual absence of exportable deposits of natural resources have caused the Japanese to expend considerable resources in investigating potential of the ocean. The current Japanese budget for ocean research and development totals $99 million. The private sector is expected to commit approximately $127.7 billion between 1970-80. Particular attention is being directed toward offshore oil and natural gas exploration. Bob Watkins, 202-967-2461.

Business Equipment, INTERORGTEKHNIKA-75, International Exhibition. Moscow. Sept. 2-16. Soviet imports of business equipment from the industrialized West have tripled since 1967 and are expected to increase another 66 percent by 1977. Soviet specialists regard the U.S. as the world's foremost producer of modern business equipment. Jim Robb, 202-967-4810.

Food and Tobacco Processing. International Fair, Plovdiv, Bulgaria. Sept. 3-10. Agriculture accounts for 25 percent of the Bulgarian GNP and over 30 percent of exports. During the next year Bulgaria intends to spend $220 million in modernization and expansion of plants and facilities, and is anxious to use American technology and equipment to help improve output and efficiency. Cooperation with foreign firms is now possible and encouraged. Jim Bushery, 202-967-5163.

Process Controls and Material Test Equipment. International Fair, Brno, Czechoslovakia. Sept. 10-18. Czechoslovakia is one of the most industrialized countries of Eastern Europe and presents a large market for controls and test equipment, especially in the chemical, textile and food processing industries. The Brno Engineering Fair is one of the largest in Eastern Europe, with annual attendance of over 400,000. Buyers from all of the COMECON countries typically attend this event. Jim Bushery, 202-967-5163.

Instruments and Controls for Science and Industry. U.S. Trade Center, Tehran. Sept. 14-18. The current national Development Plan projects about $22 billion in investment for instrument and control related fields from 1973-78. Iran's foreign exchange earnings are expected to reach $18 billion, while imports jump to $10 billion in 1974-75. The instrument and control market is expected to multiply more than 2½ times by 1978, to $168 million. The U.S. share of imports of instruments and controls, around 19 percent, is a close second to West Germany. Karl Reiner, 202-967-4652.

Licensing, Investment Abroad

Licensing and investment proposals from foreign firms are listed in these columns. Specific product interests in each proposal are highlighted in bold type to facilitate identification and each proposal is preceded by the appropriate four-digit product number taken from the Standard Industrial Classification (SIC) Manual.

Background information on opportunities abroad and assistance on overseas investments are available from the Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. "P" numbers should be used when responding to any of the specific proposals listed.

WTDR indicates that a World Traders Data Report containing financial and background information on the foreign firm is available for $15 from the Export Information Division, Room 1313, U.S. Department of Commerce, Washington, D.C. 20230, or from any Commerce District Office.

OPIC indicates that the country involved is eligible for investment insurance coverage and financing from the Overseas Private Investment Corporation. Information regarding applicable coverage may be obtained from OPIC, Washington, D.C. 20527.

1321, 2861, 2873—INDIA — Large Indian firm plans to establish **coal based fertilizer/petrochemical complex** in Madhya Pradesh State and seeks technology and possibly equity collaboration from U.S. firms. Plants, processes, and daily production are as follows: ammonia—coal gasification, hydrogen enrichment and ammonia synthetic—1,200 metric tons (m.t.); urea—stripping process—1,500 m.t.; methanol—medium pressure process—300 m.t.; caprolactam—low sulfate process—100 m.t.; and ammonium sulfate—280 m.t. Project is estimated to cost $250 million, including foreign exchange component of about $80 million. Foreign partner would be offered up to 15% equity participation, subject to Indian government approval. Firm is among largest industrial and business houses in India, with annual sales exceeding $250 million. K. L. Pai, General Manager (Development), J. K. Synthetics Ltd. "Dakshineshwar," 10 Hailey Road, New Delhi 110001, India. WTDR. P-75019. OPIC.

1500—NIGERIA — Experienced **civil engineering, construction** firm seeks joint venture. U.S. partner would provide financial and technical assistance in return for equity. Nigerian company, engaged in road and building construction and maintenance, operates throughout country, maintains branch office in Ikeja, Lagos State. Directors were educated abroad, have had extensive experience with other companies. Firm, established 1972, has 500 employees. Peace A. Tella, Aldar & Co. Civil Engineering and Building Contractors, Private Mail Bag 5107, Ibadan, Nigeria. WTDR. P-75026. Further details available from Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230.

1629—ISRAEL—Large firm seeks joint venture to engage in construction of future **thermal power stations.** Needs U.S. partner to supply technical know-how, managerial expertise. First project will be power plant in Hedera consisting of four units. Company is a major manufacturer of switchboards, capacitors, fuses; only domestic producer of transformers. Employs 850, is opening two additional plants for production of heavy industrial equipment. W. Tyrman, Manager, Electronic Components Division, Elco Israel Electro-Mechanical Industry Ltd., P.O.B. 230, Ramat Gan, Israel. P-75045. OPIC.

2033—GREECE—Large food processing firm is seeking licensing arrangements to obtain know-how to produce **tomato catsup** according to U.S. specifications. Firm reports 1974 turnover of $5.5 million. Products currently produced by company include tomato paste, jams and specialty foods. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-75028. OPIC.

2033—SIERRA LEONE — Government is seeking private investors for joint venture to operate a **pineapple and tomato canning complex.** Preliminary plans envisage plantation of 2,000 hectares and plant with annual capacity of 26,500 tons of canned pineapple, 10,000 tons of canned tomato paste. Estimated cost of complex, $23 million. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-75016. OPIC.

2400—UNITED KINGDOM — Large company engaged primarily in commercial and security printing seeks **licenses to produce specialty coated paper products.** Firm is major supplier of stamps to the Britsh Post Office and also to some 140 other countries. Major part of its stamp activities involve production of coated and gummed papers incorporating different requirements for postal automation. Company is expanding its paper converting division, will shortly be able to offer solvent as well as aqueous coating. Firm has extensive finishing facilities, employs some 2,300 at its 12 plants. Also interested in cross licensing agreements or joint ventures for manufacture of its products in U.S. Stephen F. Young, Product Manager, Harrison Eden Fisher Group, Harrison House, Coates Lane, High Wycombe, HP13 5EZ, England. P-75003.

2542, 3079—SWITZERLAND—Seeks license to manufacture: **vertical and horizontal jalousie, shutter systems** (plastic lamellar); **extruded aluminum profiles,** small to medium size; **mobile, light weight walls** to be used as partitions in restaurants, offices; and **cast plastic items** for industrial, household and commercial use (maximum size: 200 sq. cm., 300 cu cm.). Firm has modern extruding and casting machinery, produces a variety of plastic and aluminum items for building industry and interior decoration trade. Company employs 60, has paid in capital of 500,000 Swiss francs. E. Maron, Maron & Co., AG, Postfach, 8590 Romanshorn, Switzerland. P-75017.

2875, 3295—PAKISTAN — Seeks technical know-how and possible joint venture collaboration with U.S. firms to expand **pesticide formulation and mineral processing operations.** U.S. partner should be capable of supplying sophisticated machinery required in these industries. Operations include liquid, dust and granular pesticide formulations, and calcined lime, calcium hydroxide, fullers earth, magnesium carbonate, calcium sulfate and barium sulfate processing. G. Moeenuddin, Chairman, National Chemicals (Pakistan) Ltd., 6 Chamba House Lane, Golf Road, Lahore, Pakistan. P-75029. OPIC.

3079—BAHRAIN — Seeks license or joint venture to produce **medical, surgical and other hospital products** including disposable items such as syringes, containers. Firm, division of A. A. Zayani & Sons Co., currently produces household plastic items, bottle crates, jerry cans and water and conduit pipes. Production will be in the Free Zone industrial area, eligible for reduced customs duties. Majid Zayani, Manager, Gulf Plastics Industries, P.O. Box 894, Manama, Bahrain, Telex 8315/8320. WTDR. P-75027.

3079—GERMANY—Firm seeks to acquire license for manufacture of **cold molded polypropylene** (or similar material) parts up to piece weight of 180 grams. Company manufactures injection molded plastic parts, especially closures. Estab[illegible]ed 1953, employs 25. Herbert Erichson, [illegible]denscheid, Altenaer Strasse 23, Postfach [illegible], Germany. P-75013.

3079—GERMANY— Manufacturer and distributor of **plastic injection molded parts up to piece weight of 500 grams, and thermoplastic parts** wishes to expand production and seeks licenses from U.S. manufacturers of new products in this field. Established 1952, employs about 100. W. Neumann, HONASCO Kunstsoff-Technik GmbH & Co. KG, 4902 Bad Salzuflen 1-Schotmar, Asper Strasse 29, Postfach 3424, Germany. P-75014.

3079—SWITZERLAND—Seeks license and technical cooperation to manufacture items made from **polystyrene expanded and plastic foams,** especially for industrial applications. New firm of graduate researchers specializing in plastics for industrial use and related consulting engineering. Company markets throughout Europe, has staff of 10, and capital stock of 100 000 Swiss francs. Firm is prepared to participate in related research and applications engineering. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-75036.

3262, 3942, 3949—UNITED KINGDOM—Leading toy manufacturer wishes to diversify into **housewares, sporting goods** and to add to its line of **nursery and pre-school playthings.** Presently produces diecast model vehicles, plastic kits, motorways and track sets, electro-mechanical toys, dolls, figures, etc. Output is about 4-5 million pieces per week. Eighty percent of company's production is exported to 132 countries, in many of which it has wholly owned subsidiaries. Company has 14 U.K. branches. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-75005.

3299—INDIA—Seeks technical assistance for production of 300 metric tons of **mica paper** and 200 metric tons of **mica integrated insulation products.** Also, desires engineering services for selection of equipment. Firm has been granted government of India's Letter of Intent. Presently produces automobile tires and tubes. Hasmukh S. Desai, Technical Advisor, Premier Tyres Ltd., Merchant Chamber, 41 New Marine Lines, Bombay 400020, India. WTDR. P-75004. OPIC.

3312—INDIA—Seek **engineering design services from U.S. company to produce ERW steel tubes and pipes.** Three-phased project involving establishment of plant in Bihar to produce steel tubes and pipes has been endorsed by Bihar State government. First phase envisages installation of mill to annually produce 20,000 metric tons of tubes ranging from ½" to 2½". Participants interested in purchasing designs, detailed drawings. Project cost estimated at $1.3 million. S. P. Agarwal, 4/112 Vishwas Nagar, Delhi 110032, India. P-75041. OPIC.

3412—YUGOSLAVIA—Firm seeks licensing or possible joint venture arrangement to

manufacture **intermodal shipping containers.** Company produces parts for motor vehicles including truck chasses and brakes. Employs 300. Spasoje Milinkovic, Export Manager, KUGLEX, Bulevar Revolucije 80, P.O. Box 930, 11000 Beograd, Yugoslavia. Telephone: 011/438-422; cable, KUGLEX; telex, 11482 YU KUGLEX. P-75038.

3429—NEW ZEALAND—Firm seeks license arrangement with U.S. manufacturer of **complete range of builders' household and furniture hardware.** Company is manufacturer, importer and wholesaler of high quality motor vehicle components and accessories, with branches in Auckland and Wellington. C. Dawson, Manager, Dawson Reed & Co., P.O. Box 294, Christchurch, New Zealand. WTDR. P-75043.

3469—GERMANY—Manufacturer, exporter of various tubular steel and aluminum residential furniture items wishes to expand its production and seeeks licensing or possible joint venture arrangement to manufacture products in the field of **home care and convalescent aids of tubular steel, stainless steel or aluminum.** Established 1973, employs 20. H. Schiffer, 575 Menden, Turmstrasse 3, Germany. P-75039.

3496—SWITZERLAND—Medium manufacturer of steel nets seeks to manufacture under license **wire nets for the building industry, gardening, agricultural use and certain household and kitchen utensils.** Company is equipped with modern automatic welding machines for welding steel wire with diameters between 3 and 14 mm. Maximum possible widths 2.6 m., maximum length 12 m. Firm, prepared to purchase new equipment if necessary, is connected with company in plastics field and Switzerland's third largest importer/distributor of steel and other metals for diverse applications. Employs 50. H. Danioth, Director, RUWA AG, 3454 Sumiswald, Switzerland. P-75031.

3498—JAPAN—Seeks licensing arrangement to manufacture **automatic tube bending machines.** Company presently manufactures small arms ammunition for government agencies, shot gun shells, speed variators, spring generators, coin manufacturing presses and automatic presses. Capitalized at $2.5 million, it has 700 employees and reports 1973 sales of $15 million. Has branches in Tokyo and Osaka. Tetsuo Sato, Assistant Manager, Research and Development Department, Asahi-Seiki Mfg. Co., Ltd., Asahimae-cho, Owari-Asahi City, Aichi Prefecture 488, Japan. Phone, Owari-Asahi (05615) 3-3111; cable, ASAHISEIKI SETO; telex, 4496-007. P-75040.

3500—UNITED KINGDOM—Firm manufacturing woven and printed labels, ribbons, trimmings and name tapes seeks to diversify. Wishes to undertake **light engineering work and woodworking.** With a view to eventual joint venture in U.K., firm also is interested in importing and selling within EEC textile machinery and **machinery for garment making-up trade.** Firm has 750 employees and 25 salesmen with branches in Australia, Canada and U.S. W. S. Symes, J & J Cash Ltd., Kingfield Road, Coventry, England. P-75021.

3531—ITALY—Manufacturer of machinery for construction industry plans to expand and diversify its product line. Seeks license to make **materials handling equipment.** Interests include **elevator trucks** complete with internal combustion engine (preferably diesel) and loading capacity of more than 5 metric tons for lifting and transporting different materials; and **mobile cranes** complete with internal combustion engine (preferably diesel) with hydraulic or cable operation and a loading capacity of over 5 tons for outdoor and indoor utilization. Initial estimated production is 500 elevator trucks and 100 mobile cranes annually, beginning in 1976. Company will provide necessary capital, initially use part of its present production facilities, and is prepared to enlarge its production capacity. Firm produces concrete mixers and hydraulic presses, employs 300. Forty percent of materials handling equipment would be marketed in Italy, balance exported. SIOME—Societa Italiana Officine Macchine Edili s.r.l., via 1 Maggio 23/a, 21046 Malnate (Varese), Italy. WTDR. P-75009. Additional details available from Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230.

3535—GERMANY — Experienced manufacturer of **lifting machinery, other materials handling equipment,** seeks license or agency agreements for newly developed products. Market in Germany and Europe. Company has well trained service and sales force, production facilities. Gunter Nitsch, German American Chamber of Commerce, 666 Fifth Ave., New York, N.Y. 10019. P-75018.

3540—GERMANY—Seeks license to manufacture **transfer machinery** for use in metal working industry. This specialized machinery is for automatic transfer of machined parts from one machine tool to another. Firm builds special machine tools, mainly deburring machinery for automotive industry. It also produces printing machinery for plastic foil processes. Exports to France, Italy and Scandinavia; employs 150. Juergen Sommer, Manager, Barsseler Maschinenbau Gesellschaft mbH, Industriestrasse, 2919 Barssel, Germany. P-75011.

3541—GERMANY—Medium-sized manufacturer of screen printing and offset printing machines and related equipment seeks licensing agreement with U.S. manufacturers of **aerosol (hair spray) filling and capping machines or complete systems.** Established 1955, employs 300. P. E. Roser, Werner Kamman Maschinenfabrik, 498 · Buende/Westf., Elsemuehlenweg 83-89, Postfach 2109, Germany. P-75015.

3544—VENEZUELA — Medium sized firm engaged in metal drawing and stamping seeks license agreement to manufacture **low-cost dies for laminated metal deep drawing.** Would involve pressures up to 630 metric tons, 1.90 x 2.50 m. maximum size. Dies must be recoverable through remelting or modification. Estampados Metalicos Nacionales Automotrices C.A.—Emetalca, 2DA Calle Industrial San Martin, Aptdo. 20248, Caracas, Venezuela. P-75037.

3551—GERMANY — Leading manufacturer of bakery and food service equipment offers for immediate sale modern production facilities due to recent consolidation of production with opening of new central plant. The centrally located plant is fully equipped and ideally suited to produce light and medium-heavy equipment with labor readily available at reasonable wages. Under consideration also is possibility of setting up joint venture for distribution of both seller's and buyer's products through a long established European sales network. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce. Washington, D.C. 20230. Telephone (202) 967-3786. P-75006.

3552—DENMARK—Seeks license to produce **textile machinery.** Would market in Europe, Middle and Far East and Africa. Danish firm, manufacturing lace scalloping, cross spooling and doubling machines, and other textile equipment, is affiliate of major manufacturer and exporter of laces and lace goods. Offers royalty payments to U.S. licensor. Eltex Textile Machinery, Ringvejen, DK-8800 Viborg, Denmark. WTDR. P-75007.

3559—SWITZERLAND—Medium sized consulting engineering company is expanding its activities in advanced **waste water treatment equipment.** Firm is interested in obtaining technology and machinery for application in third and fourth stage of waste water treatment. This includes chemical treatment, ozonation, 0_2 treatments, reverse osmosis and microstrainers. It is also interested in engineering of complete plants and exchange of technical know-how. Firm is well established. Handles planning and construction of complete sewage treatment facilities as general contractor. Manufacturing facilities available through affiliated companies. Bachmann, Gander & Co., Consulting Engineers, Feil-

Swiss Firm Seeks Licenses For Products, Processes

A diversified Swiss firm with engineering and/or manufacturing capabilities in heavy and light industry, transportation, utilities and consumer products, seeks technical know-how in the following ten fields:

Plastic tubes and pipes and related accessories and supplies for drain systems, pipelines and sanitary installations, to protect electric underground cables; novel types of metal pipes and tubes for drains, and industrial and other applications; novel, prefabricated parts for the building industry, including related techniques, equipment and "know-how"; woodworking machines; automatic materials handling and conveying systems, including automated stock warehousing and filing systems for industrial plants, administration buildings, hospitals; novel, space-saving mass transportation systems for cities, airports, tourist centers and similar uses; pollution control equipment, machinery and new techniques for solid-waste handling and recycling (pyrolysis), advanced waste water treatment (reverse osmosis, filtering with active carbon, ozonation), and related engineering; energy saving central heating systems (e.g. combined with waste disposing facilities) for heating complete blocks, or small cities (no air conditioning); equipment and techniques for energy saving (industrial, commercial, residential); and hydraulic drives and controls for heavy transportation vehicles including railroads.

The company has plants in several European countries and had sales of about $300 million in 1973. In addition to seeking new technology for use in Europe, the firm is inetrested in undertaking large projects through joint ventures in any country in Western Europe. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. WTDR. P-75046.

Australian Firm Seeks U.S. Technology, Construction Methods To Rebuild Darwin

A leading Australian property developer seeks U.S. designs and construction methods for cyclone or tornado proof homes to replace those destroyed at Darwin. The firm will consider a joint venture, license or similar agreement to build single family dwellings, duplexes and town houses, and would incorporate methods and technology with ability to withstand tornadoes. The company plans to submit proposals to the Australian government.

Estimates call for construction of up to 10,000 dwellings at a cost of $300 million. The Australian company is a leading property developer, contractor, builder and real estate agent. Activities include property management, motel and resort operations, production of lightweight aggregate and manufacture of bricks. Max Ruttur, Technical Consultant, Community Planning & Management Pty. Ltd., Australia Square, Sydney 2000, Australia. Telephone, 20 572. P-75012.

gengraben 5, postfach, 8034 Zurich, Switzerland. P-75008.

3561—ARGENTINA — Firm interested in manufacturing **large pumps under license** from U.S. firm. Sizes range between 100,000 g p.m. max. head 40 feet of raw water and 20,000 g.p.m. max. head 180 feet of potable water. Company maintains plant of 150,000 sq. ft. that includes iron foundry, molding and casting facilities, machine shops and design facilities. Principal product lines include complete range of valves, high and low pressure valves for petroleum industry and water/fluids in general. Employs 190 and reports $3.2 million annual sales. Paul Chiaraviglio, Vice President, Moto Mecanica Argentina S.A.I.C., Casilla de Correo 46, San Martin, Provincia de Buenos Aires, Argentina. WTDR. P-75033.

3562—BRAZIL—Well established engineering company seeks joint venture to expand production of **marine bearings.** Includes tilting pad thrust, line shaft and tailshaft bearings and sealing systems. Firm's babbiting department makes specialty cast engine bearings using spinning process. Equipment includes engine lathes, milling machines, grinders and boring machines. Employs 120. R. C.C. de Freitas, CIPALDA Engenharia Industria e Comercio S.A.; Av. Brasil. 1976; 20.000 Rio de Janeiro, GB. Brazil. WTDR. P-75010. OPIC.

3563—UNITED KINGDOM — Established firm seeks licensing arrangement with substantial U.S. manufacturer to produce **reciprocating high pressure gas compressor.** Also interested in related complementary equipment such as steam turbine or reduction gear. Company is engineering division of Swan Hunter Group, U.K.'s largest shipbuilders employing some 33.000. Company manufactures and distributes compressors, cryogenic pumps, freezers, boilers and general engineering castings, employing 900. R. W. Bell, London Manager. Wallsend Slipway & Engineering Co. Ltd., Cosmos House, 1 Bromley Common, Bromley, Kent, England. P-75032.

3589—SWITZERLAND — Seeks license to manufacture **small to medium sized garbage and industrial waste shredders.** Interested in mobile units and permanent equipment. Also wants to make small electrically powered units for household use. Firm produces special machine and metalworking tools, operates modern plant equipment for most metalworking operations including high precision work, sells its products worldwide. W. Frei, W. Eckold AG, Machine Tools, 7202 Trimmis, Switzerland. P-75025.

3595—UNITED KINGDOM—Major manufacturer and distributor of **mechanical, electromechanical and electronic counters and components** seeks license or joint venture. Firm wants to produce any products compatible with current operations. Also makes numbering and dating machines, precision metal alloys and plastic components. Has worldwide sales, employs over 1,000. H. E. Mattox, Assistant Commercial Attache, U.S. Embassy, Grosvenor Square, London W.1, England. P-75024.

3639—GERMANY — Seeks licensing agreements from U.S. manufacturers of **garbage compactors** (electric current: 220 volt, 50 cycles). Presently manufactures and distributes switch gear installations, motor controls and other equipment. Established 1956, employs 130 and sells in all European countries, Canada and United States. Elektro-Steuerung Eberhard Bunz GmbH, 5601 Gruiten, Thunbuschstr. 2. P-74757.

3643—UNITED KINGDOM—Large, established firm currently manufacturing **rectangular connectors, P.C.B. edge connectors, P.C.B. two part connectors, morse keys and precision moulding** seeks to manufacture under license similar items plus **mil-spec items and circular round connectors.** Has good marketing set-up throughout U.K./European area. H. E. Mattox, Asst. Commercial Attache, U.S. Embassy, Grosvenor Sq., London W.1. WTDR. P-74758.

3661—UNITED KINGDOM—Large firm engaged in wide range of manufacturing activities including avionics and inspection equipment seeks to diversify. Wants to produce **communication equipment** for distribution in U.K. and Europe. Established in 1900, employs 2,000. H. E. Mattox, Asst. Commercial Attache, U.S. Embassy, Grosvenor Sq., London W.1. WTDR. P-74759.

3662—UNITED KINGDOM—Seeks licenses to manufacture **traffic signalling, ramp control and automatic toll collection equipment.** Plans to market in U.K. and Europe. Engaged in wide range of engineering, manufacturing activities, expanding into new product areas. Employs 2,000. H. E. Mattox, Asst. Commercial Attache, U.S. Embassy, Grosvenor Sq., London W.1. WTDR. P-74760.

3662—UNITED KINGDOM—Seeks license or joint venture to manufacture and market **traffic control and signaling systems.** Interests include **traffic computer control three way signaling systems, ramp control and monitoring and toll collection.** Firm is especially interested in toll collection systems. Company has capability to market equipment on a worldwide basis. It is affiliated with a major British concern with high commercial standing. H. E. Mattox, Assistant Commercial Attache, U.S. Embassy, Grosvenor Square, London, W.1., England. P-74727.

3662, 3811—UNITED KINGDOM—Large U.K. concern engaged in a wide variety of engineering manufacture ranging from avionics to inspection equipment for industry, is seeking to expand and wishes to collaborate with U.S. **avionics equipment** manufacturers for production of compatible products. Firm presently produces vertical, directional and rate gyros; accelerometers; master reference platforms; displacement transducers; actuators; aircraft reference systems, flight control systems; flight directors. Firm is particularly interested in producing head of display equipment. Established in 1900; employs 2,000. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. WTDR. P-74740.

3662, 3811—UNITED KINGDOM — Large producer of **avionics and inspection equipment** for industry seeks collaboration with U.S. firm. Presently manufactures, designs and markets precision gauging systems, electronic indicator and comparator units, air operated indicators, liquicolumns, components and systems, air gauging probes and electropneumatic gauging indicators and systems. Wishes to manufacture under license in U.K. similar products. Established in 1900; employs 2,000. H. E. Mattox, Asst. Commercial Attache, U.S. Embassy, Grosvenor Sq., London W.1. WTDR. P-74761.

3679—UNITED KINGDOM—Seeks license to manufacture **electronic equipment or assemblies in production run quantities.** Particularly interested in consumer products such as **tape recorders, audio equipment and car stereo systems.** Also **fire detection, security, gasoline self-service equipment and modules or assemblies for computers.** Company designs and produces wide range of electronic products supplied to original equipment manufacturers. Makes stereo cassette record/playback modules. E. G. Bull, T.D., Sales Director, G. R. International Electronics Ltd., Doman Road, Camberley, Surrey, England. P-74743.

3679—HONG KONG—Seeks joint venture to manufacture **digital electronic quartz watches.** Can use approximately $500,000 worth of electronic modules, either of liquid emission diode or liquid crystal diode system, annually. G. D. Hagen, Mng. Dir., MIG International Ltd., 201 Hang Chong Bldg., 5 Queen's Rd. C. Cable: Eastwestor Hong Kong; Telex: HX-75206, Telephone: 5-223013. P-74762.

3713—GERMANY—Seeks license to manufacture **garbage trucks** equipped to collect, compact and transport residential and industrial garbage and refuse. Firm presently produces agricultural and special machinery. It has annual sales of about $5 million and employs 140. Josef Kaeuferle, Stahl-und Maschinenbau, 8890 Aichach, Postfach 1327, West Germany. P-74728.

3823—UNITED KINGDOM—Manufacturer of **marine diesel engine components, electro deposited foil and pressure release devices,** seeks licensed manufacturing arrangement or joint venture in latter area, with special reference to pressure release devices for use in chemical and petrochemical industries. Products involved should be of highest quality and incorporate latest technological advances. Firm founded in 1946, employs 300 and has annual sales of nearly $7 million. Mr. P. Torday, Commercial Director, Torday Ltd., West Chirton Industrial Trading Estate, North Shields, Tyne & Wear, England. Telephone: North Shields 75577, Telex: 53517, Cable: Torday, North Shields. P-74763.

7361—EUROPE—Major European **personnel recruitment firm** is seeking joint venture with similar U.S. firm not currently represented in Europe. Firm recruits high-level executive personnel for European companies. Representative plans to visit U.S. in March for discussions. Foreign Investment Services Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-75020.

Licensing In U.S.

For additional information on these opportunities to manufacture foreign firms' products in the United States under a licensing agreement or in partnership, write the Investment Services Staff, Bureau of International Commerce, Room 4020, U.S. Department of Commerce, Washington, D.C. 20230 (202-967-2248) referring to the appropriate file number.

FRANCE—License to manufacture photoluminescent primer in U.S. is being offered by French firm. This primer is used for safety markings in basements, corridors, parking areas, subways, and airport and on road barriers. **File 2655**

FRANCE—Licensing rights for device insuring smooth functioning of continuous stereophonic cartridge bands are offered by French inventor. Device is designed to eliminate breaking or premature wearing of tapes due to friction. Consisting of bearing roller and spindle, it can be adapted to cassettes of all types. **File 2656**

GERMANY—U.S. licensee to manufacture universal scrubber for chemical, steelmaking, and metalworking industries is sought by German firm. Scrubber is designed to remove solid and gaseous pollutants from industrial stack discharges; its basic unit consists of an inlet, scrubbing zone, liquid tank, reflux tube, separator, outlet, and exhaust fan. Advantages of the scrubber include ability to operate at peak efficiency with all energy inputs and adaptability to variety of scrubbing liquids. **File 2657**

GERMANY—Fertilizer spreader is offered for manufacture under license in U.S. by

German firm. Allegedly guaranteeing uniform spreading, machine has conveyor belt spreader arms that will fold back if they come into contact with fences or trees and then return to working position. **File 2658**

GERMANY—A number of German firms, working through a broker, seek U.S. licenses for the following products and processes: filters for improving water quality; injection molding machines, using explosive charging, for processing thermoplastics; foam extrusion of plastics; new extrusion-casting technique for manufacture of plastic parts; equipment, designed to increase concentration, for assisting the learning process; and reserve tanks for cars. **File 2659**

SWITZERLAND—Swiss firm is offering its analog electronic quartz watch for manufacture under license in the United States and distribution in the Western Hemisphere. Compared to conventional or similar timepieces, this watch features higher precision and greater simplicity in assembly, repairs, and interchangeability of the power source. Great market potential is believed to exist in the United States for this generation of electronic watch, which will sell at modest cost. In addition to watch manufacturers, any company familar with electronic assembly of small mechanical parts employing at least ten could qualify as a licensee. **File 2660**

SWITZERLAND — Small Swiss company wishes to have its chemical soil stabilizing agents produced in U.S. under licensing or joint venture arrangements. Used in building roads, parking lots, airfields, and dams, process is based on two chemicals that increase soil solidity, resistance to erosion, and dust control. The agents can be applied with conventional roadbuilding equipment without endangering ecological balance of soil or region. Already in use in a number of countries, process reportedly represents considerable cost and labor savings over conventional methods. Suitable U.S. partners could be manufacturers of chemical, asphalt, or petroleum products oriented to highway building. **File 2661**

SWITZERLAND—Highly specialized Swiss manufacturer of hydraulic step motors for industrial applications seeks U.S. licensee. These motors have been widely accepted throughout Europe for industrial production machinery, construction machines, and heavy materials handling systems. Licensees in several countries have already been appointed. **File 2662**

SWITZERLAND — Large Swiss company seeks U.S. licensee to manufacture its indoor metal ceilings, lighting fixtures, and other architectural metal constructions used in acoustics, heating, and ventilating for shopping malls and commercial and office buildings. These items have been marketed in a number of Europe and African countries. **File 2263**

YUGOSLAVIA—Yugoslav enterprise is seeking U.S. licensee to manufacture its prefabricated dwelling, intended mainly for accommodation of workmen at construction sites. Support structure is made of sandwich-type concrete and steel sections, with outer lining of profiled polyester. All necessary living facilities for up to four people are contained within the dwelling. **File 2664**

GERMANY—German manufacturer of plastic parts and heavy duty metal parts, stamped and drawn, for agricultural vehicles and agricultural and construction machinery is seeking joint venture partner in the United States. Such an arrangement would emphasize distribution by U.S. partner of German firm's various discs for agricultural machinery and double disc wheels, with and without steel hub, for agricultural vehicles. **File 2665**

Foreign Trade Inquiries

These trade opportunities are based on reports received from the U.S. Foreign Service—Department of State by the Trade Opportunities Division, Room 2323, U.S. Department of Commerce, Washington, D.C. 20230. The commodities in which foreign firms have interest are indicated by the five-digit numbers and commodity classifications which are from the Standard Industrial Classification (SIC) Manual and the Numerical List of Manufactured Products, 1972 Census of Manufactures.

U.S. firms should be aware that the listing in Commerce Today *of opportunities to trade in specific commodities and technical data does not necessarily imply approval of their export by the Department of Commerce pursuant to the Export Administration Act of 1969. Applicable export licensing regulations must be followed.*

Every effort is made to include only traders with good reputations. However, the Department cannot be responsible for any trade relations.

WTDR indicates that a World Traders Data Report on this specific firm is available at $15 from the Export Information Division, Room 1313, U.S. Department of Commerce, Washington, D.C. 20230. A WTDR is a trade profile which contains commercial information including financial references, on an individual foreign firm. Orders must include complete name and address of the subject firm and be accompanied by payment. Further information concerning WTDRs and request forms are available at each Commerce District Office.

The mark (•) indicates that this trade opportunity is a request for bids by a foreign government agency.

Direct Sales

Heavy construction, except highway and street construction

• **16200—HONDURAS** — Tender for construction for expansion of Rio Lindo Hydroelectric Project (Tender No. 750-5). Bidder shall submit information on previous successful experience in constructing work comparable in type, size and quality to that required (involved are embankments and spillways, control structures, dam, canal and drainage systems, distribution depot, etc.). Each bidder shall furnish, on request, any further information considered necessary to establish qualifications and financial ability. Contract documents available, for $50 per set, from either Jose Dalmiro Caballero, Manager, Empresa Nacional de Energia Electrica (ENEE), Apartado Postal 99, Tegucigalpa, D.C., Honduras, or from Harza Engineering Co., 150 South Wacker Dr., Chicago, Ill. 60606. Only construction firms located in World Bank member countries and Switzerland may participate. Bid deadline March 3.

Public building, related furniture

25310—ETHIOPIA—Construction and Maintenance Dept., Ministry of Education, P.O. Box 40036, Addis Ababa, is compiling list of qualified manufacturers of furniture and school supplies for various projects, such as science center, educational production center, teacher training center, village primary schools, and rural development center. Deadline is March 15. Interested U.S. firms are invited to contact Ministry of Education for qualification purposes.

Gum, wood chemicals

• **28600—SRI LANKA**—Supply of dextrin (for cotton sizing) 5 million tons and thin boiling starch (fluidity 40) 100 million tons. Tender No. 74/213. Bid deadline March 5, Department of Small Industries, Colombo 1, Sri Lanka. Tender documents available from Chemicals and Rubber Program, Materials Division, OBRA, BDC, Room 2130, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-3464, or Embassy of Sri Lanka, 2148 Wyoming Ave., NW., Washington, D.C. 20008. Review copy available also at Department of Commerce District Office, Federal Bldg., Box 36013, 450 Golden Gate Ave., San Francisco, Cal. 94102, 405-556-5864.

• **28600—SRI LANKA**—Supply of dyes and chemicals. Tender No. 74/212. Bid deadline March 6, Department of Small Industries, Colombo 1, Sri Lanka. Tender documents available from Chemicals and Rubber Program, Materials Division, OBRA, BDC, Room 2130, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-3464, or Embassy of Sri Lanka, 2148 Wyoming Ave., NW., Washington, D.C. 20008. Review copy also available at Department of Commerce District Office, Federal Bldg., Box 36013, 450 Golden Gate Ave., San Francisco, Cal. 94102, 415-556-5864.

Agricultural chemicals

28790—SURINAM—Supply of pesticides and fertilizers as follows: Sodium Pentachlorophenate, 3,000 Kg., 10 x 5 or 5 x 10 kg in drums or cartons; Propanil—36% E.C., 32,000 L., coated drums of 200 L.; 2,4-D Amine—72% E.C.,, 10,000 L., coated drums of 200 L.; Methylparathion 50% E.C., 10,000 L., coated drums of 200 L.; Monocrotophos 60% E.C., 4,000 L., coated drums of 200 L.; Endrin 20% E.C., 10 000 L., coated drums of 200 L.; Carbaryl 85% W.P., 4,000 Kg., drums of 45 or 50 Kg.; Urea 46% N, 1,500 Tons, bags of 50 Kg. Interested suppliers quote c.i.f. prices directly to R. A. Elias, Sternbakkerijstraat 32, P.O. Box 590, Paramaribo, Surinam. Cable Napelias Paramaribo.

Steel mill products

• **33100—AFGHANISTAN**—Tin plate to be used in fabricating containers for edible products. Quantity unspecified. Bid deadline as soon as possible. Engineer M. Hashem Toufiqi, Ministry of Mines and Industries, Kabul.

Primary smelting, refining of nonferrous metals

33331XX—33334XX—HONG KONG—Zinc bars & zinc sheets. Firm believes above will enjoy good market in Hong Kong as well as

in S.E. Asia countries. Firm not only deals in pleasure crafts & equip., but also handles wige range of other product lines. Cable or telex—S. D. Ning, Gen. Mgr., Scientific Service Co., Ltd., Sincere Insurance Bldg., 15/F, Hong Kong. Cable Scientific Hong Kong; tel 5-277721; telex HX-3469. Dir. sale & dist.

Rolling, drawing, extruding of nonferrous metals

• **33500—INDIA**—7,000 meters plus accessories 660-volt grade mineral insulated or asbestos insulated heat resistant copper covered cable. Tender No. PR-SPEC-309; bid deadline March 14. Purchase Wing, Materials Management Department, Damodar Valley Corporation, Bhabani Bhavan, Alipore, Calcutta, 700027. Specifications available from Copper, Lead and Zinc Program, BDC, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-2438.

Cutlery, hand tools, general hardware

3429832 — UNITED KINGDOM — Trunk hardware. Firm is family concern employing about 15 with annual sales volume in region of 200,000 pounds. Mfrs. steamer trunks & wishes to purchase U.S.-made trunk hardware. Mr. Markovitch will be visiting U.S. in April/May & would like to visit prospective suppliers of above. Reply to J. Markovitch, Reliant Travel Goods Ltd., 12 Rutherford Close, Leigh-on-Sea, Essex. Tel 0702-522460.

Construction, mining, materials handling machinery, equipment

• **35330—KENYA** — Two truck mounted rotary drill rigs and test pumping units. Bid deadline March 3. Tender documents may be obtained from E. A. Ngunya, Director of Water Development, Ministry of Water Development, Workshop Road, P.O. Box 30521, Nairobi. Firm price quotations for whole or part tender must be for delivery c.i.f. Mombasa and to the Ministry, Nairobi headquarters. Tenders should be submitted to the Ministry.

Special industry machinery

• **35590—ECUADOR** — Supply, installation, and start-up operations for a dry process turnkey cement plant. Bid deadline March 25. Tender documents available for non-refundable sum of $80 from Dr. Julio Jaramillo-Arizaga, Manager, Empresa "Industrias Guapan S.A.", P.O. Box 710, Azoguez. Interested suppliers should consult WTDR 74-114, Guayaquil 1245, Nov. 5, 1974, on Empresa "Industrias Guapan S.A." FTI No. 0107100.

General industrial machinery

• **35600—INDIA**—Supply of lathe for banding traction motor armature. Tender No. 404/12/004/21.6.74. Bid deadline March 6. Financing by IDA credit. Tender documents available for $3.50 from India Supply Mission, 2536 Mass. Ave., NW., Washington, D.C. 20008, 202-265-5200. Supply Mission reference number CDN/ENQ/293.

• **35610—EGYPT**—Supply of 10 units 60 LS—100 MS head and 40 units of 60 LS—60 MS head multi-stage bore hold electrically driven pumping units suitable to be placed in wells having internal diameter of 16 inches. Each unit must have a discharge column of about 15 mts., drip proof vertical motor, of not more than 1,500 rpm., complete with 380 volt delta starter, squirrel cage, equipped with non-reverse ratchet. Strainers, expansion joints, draw-down and delivery gauge complete with piping. Bid deadline March 5. Copies of tender available from Room 2130, Transportation and Capital Equipment Division, Main Commerce Bldg., 14th and Constitution, NW., Washington, D.C. 20230 Offers should be made on f.o.b. and c.i.f. basis. Prompt supply from units in stock will give offers priority. Complete or partial delivery can be accepted. Make offers to The General Organization for Greater Cairo Water Supply, 42 Ramses St., P.O. Box 55.

35690—AFGHANISTAN—Request for product information and price quotations, c.i.f. Karachi, insurance to Kabul for 160 lb. capacity crucibles for glass manufacturing. No set deadline. Purchase to be financed from general revenues. Reply to: Engineer M. Hashem Toufiqi, President of Industries, Ministry of Mines and Industries, Kabul.

Communications equipment

36610—COLOMBIA—The Colombian Institute of Electric Power is seeking bids for supply of pole-line hardware, such as crossbars, crossarm braces, and adaptors, estimated cost $100,000. Interested firms are invited to send quotations through the Institute's purchasing agent at the following address: Benavides Melo & CIA, Ltda., Carrera 4 No. 19-78, Oficina 101, Bogota, D.E. Colombia. Specifications available on a short-term loan basis to firms located in U.S. from Science and Electronics Division, BDC-466, U.S. Dept. of Commerce, Room 1001, Washington, D.C. 20230, 202-967-2939.

• **36610—AUSTRALIA**—Director Assistant-General Supply, 3rd floor, 199 William St., Melbourne, Victoria 3000, has issued Tender No. SCHEDULE C. 8250 for stop-start teleprinter. Bid deadline July 1. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science and Electronics Div., BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36610—COLOMBIA** — Empresa Nacional de Telecommunicaciones, Telecom Calle 23 No. 13-49 Piso 6, Bogota, has issued Tender No. LICITACION PUBLICA No. 121/74 for supply of materials, components and accessories for construction of 13 telephone installations. Bid deadline Feb. 28. Copies of tender announcement and specifications available from above address for $180.

• **36610—ZAMBIA** — Central Supply and Tender Board, P.O. Box 1009, Lusaka, has issued Tender No. MF/GPO/180 for supply of various types of telephone sets, such as table type, extensions and wall sets. Bid deadline Feb. 7. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science & Electronics Division, BDC-466, Room 1001, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—ALGERIA** — Ministere De L'Interieur, Villa Dar-El-Nador, Chemin Gadouche Abdelkader (Ex La Madeleine), Hydra, Algiers, has issued Tender No. 27/74 for telecommunication equipment including microwave, multiplex and VHF associated equipment. Bid deadline Feb. 11. Specifications in French available on loan basis to firms located in U.S. from Science and Electronics Division, BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—ALGERIA** — Ministere De L'Interieur, Villa Dar-El-Nador, Chemin Gadouche Abdelkader (Ex La Madeleine), Hydra, Algiers, has issued Tender No. 2/874 for supply of 150 transceivers and associated equipment. Bid deadline Feb. 11. Specifications in French available on short-term loan basis to firms located in U.S. from Science and Electronics Division, BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—ALGERIA** — Ministere De L'Interieur, Villa Dar-El-Nador, Chemin Gadouche Abdelkader (Ex La Madeleine), Hydra, Algiers, has issued Tender No. 29/74 for 15 VHF fixed transceivers and 100 portable VHF transceivers. Bid deadline Feb. 11. Specifications in French available on short-term loan basis to firms located in U.S. from Science and Electronics Division, BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—ALGERIA** — Ministere De L'Interieur, Villa Dar-El-Nador, Chemin Gadouche Abdelkader (Ex La Madeleine), Hydra, Algiers, has issued Tender No. 26/74 for supply of multichannel VHF radio equipment. Bid deadline Feb. 11. Specifications available on short-term loan basis to firms located in U.S. from Science and Electronics Div., BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—ALGERIA** — Ministere De L'Interieur, Villa Dar-El-Nador, Chemin Gadouche Abdelkader (Ex La Madeleine), Hydra, Algiers, has issued Tender No. 27/14 for 20 channel VHF radio equipment. Bid deadline Feb. 11. Specifications available on short-term loan basis to firms located in U.S. from Science and Electronics Div., BDC-466, Room 1001, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-2939.

• **36620—COLOMBIA** — Telecom, Empresa Nacional de Telecommunicaciones, Calle 23 No. 13-19 Piso 6, Bogota, D.E., has issued tender No. BIRF III-12 for carrier equipment for expansion of existing microwave systems. Bidders must have local representation and be from member country of World Bank. Specifications may be obtained from above address for $170.

• **36620—INDIA**—The Tata Power Co. Ltd., Tata Vidyut Karyalaya, Murzban Rd., Bombay—400 001 has issued tender No. IDA/TATA/7 for power system operation monitoring equipment. Bid deadline March 15. Tender documents may be obtained at above address for $13.50 .

• **36620—KENYA**—Crown Agents for Overseas Governments & Administrations, 4 Millbank, London S.W. 1P 3JD, England, has issued Tender No. 4/74 for supply of U.H.F. radio system including multiplex battery charger and batteries. Tender documents can be obtained from above address, quoting reference numbers ELE/EAPT. WB through 3/11480.

Electrical machinery, equipment, supplies

36900—BOLIVIA—The Director of Caja Nacional de Seguridad Social is interested in discussing requirements for medical, surgical, dental and laboratory equipment with U.S. firms prior to submission of quotations. Firms interested should send qualified technical personnel to La Paz. Firms requested to contact Caja directly, stating travel plans to Caja Nacimil de Seguridad Social, Casilla 697, La Paz, attention Dr. Jorge Rojas Tardio, Director, Cable: Casegural, La Paz.

Instruments for measurement, control and analysis

• **38210—SINGAPORE** — Sewerage Dept., Ministry of the Environment, 9th floor, National Development Bldg., Maxwell Rd., Singapore 2, has issued tender No. TEN (ENV) 07/WB/74/24 for supply and installation of metering equipment to measure, record and control raw sewerage. Restricted to specially registered contractors. Interested firms can be registered by submitting brief details of experience and qualifications re-

garding work of similar nature. Registered contractors may obtain tender documents for approximately $211 from Public Works Dept., 10th floor, National Development Bldg., Maxwell Rd., Singapore 2.

Surgical, medical, dental instruments

• **38410—COLOMBIA** — Servicio de Salud de Bogota, de Avenida Caracas No. 53-80, Oficina 302, Bogota, has issued tender No. SSB-01-74 for supply of medical and surgical instruments, dental equipment and supplies, and x-ray equipment. Bid deadline March 7. Specifications may be obtained from above address for $140.

Manufacturing industries

3999999—JAPAN — Buyer seeking reliable suppliers of new issue coins of the world. Buyer is wholesaler/retailer of coins and stamps. Reference bank is Kyowa Bank, Ltd., Nagoya Branch. Reply to—Mr. Masaaki Ito, Hattori Co., Ltd., 3-8 Sakae 2-Chome, Nakaku, Nagoya 460. Cable Hattorishokai Nagoya; tel. 052-2310855.

3999999—LIBERIA — Glass aquariums for tropical fish, all related accessories, including pumps, filters, etc. Buyer wants responses ASAP with brochures & prices quoted c.i.f. Monrovia. Buyer is largest sporting goods store & maintains by far best stocked showroom in Monrovia. Carries complete line of sporting goods along with toys & games. Reply to—Raymond Haikal, Mgr., Olympic Sports, P.O. Box 357, Monrovia. Cable Olympic Monrovia; phone 21887.

Antique, secondhand stores

59330XX — TOGO — Used clothing. Firm would import large quantity if price competitive. A large expatriate establishment, firm deals in general merchandise, automobiles and spare parts. Annual turnover over $8,000,000 with about 200 field staff. Documentation requested in French. Reply to—Jean Meric, President Directeur General, CFAO, Togo, B.P. 329, Lome. Cable Senafrica Lome; telex 52-17; tel. 21-61.

Motion picture production, distribution

7813XXX — 7814XXX — BAHAMAS — Sound & color films in super-8 & video cassette tapes & reel to reel video cassettes; both on educational subjects, sports, entertainment, home movies, etc., also video systems. Interested in becoming agent as well as buying direct. Requests prices & booklets of U.S. Govt. surplus of above, if available. Firm establ. April 1974, rents & sells Fairchild & Technicolor projectors & super-8 films. Reply to William Curry, V.P., C & C Pioneer Enterprises Ltd., P.O. Box N-8766, Nassau. Tel. (809) 325-5291 or 323-5367.

German Cooperative Seeks Office Supplies

A German purchasing cooperative, representing over 350 major office supply retailers in Germany, Austria, and Switzerland, is seeking U.S. supply sources. Literature and pricing information is requested for all types of office supplies and related equipment such as non-professional drawing equipment, briefcases, desk accessories, lamps and small non-EDP office machines. Good quality and attractive design are judged important prerequisites along with price competitiveness. Little opportunity is seen for stationery or furniture lines.

Address proposals to: Buero Actuell e.G., c/o Mr. Manfred B. Juenemann, 6000 Frankfurt 63, Friesstrasse 15.

Representations

Foreign private firms are interested in agency agreements and/or distributorships for these products.

Publishing & printing

2721307—PHILIPPINES—Business & professional periodicals. Firm subscription agents for worldwide publications servicing govt. & private libraries, private firms & individuals. Interested in acting as agent for U.S. exporting agencies dealing in worldwide publications in fields of military & political affairs, economics, educational, architecture, advertising & selling, hobbies, autocraft, business & industry, building & construction, leathergoods & shoe trade, publications of general interest, fashion, furniture industry, banking & finance, insurance, technical & general interest publications. All subscription payments expected to be paid in advance by demand bank drafts. Reply to—Miss Julieta P. Perello, Mgr., Worldwide Publishers Enterprises, Suite 207, Engalla Bldg., Taft Ave., Manila. Tel. 59-43-58.

Glass products

3231638—AUSTRALIA—Glass reflectors for use in traffic signals. Requirements: Immed. 1,500 of 8 in. dia.; 1,000 of 12 in. dia.; annual: 3,000 of ea. dia. Specs: must meet with ASA D10.1-1958, page 2, change 2. Buyer well reputed, large wholly-owned subsidiary of Morganite Crucible Co. Ltd., U.K. Australian co. engaged in mfr. & distribution of materials & components for electrical, mechanical & electronic engineering fields. Branches in all states. Anxious make immediate contact with interested U.S. suppliers to meet standing orders waiting to be filled. Write or cable prices. Reply to—G. B. Nehl, Project Mgr., Morganite Australia Pty. Ltd., 65 Bourke St., Alexandria, N.S.W., Australia 2015. Cable Morganite Sydney; or telephone 669-5711.

Metal cans

34112XX—SOUTH AFRICA — Desires appointment as excl. agent/distributor for aluminum aerosol cans with capacity of one litre or 1,300 grams. Can will be filled locally. Excl. agency for southern Africa. Reply to—B. Van de Velde, Dir., Winfo Corp., P.O. Box 17593, Johannesburg 2000.

Fabricated structural metal products

3449452—MOROCCO—Concrete reinforcing rod in 12 meter long & 6, 8, 10, 12 & 14 millimeter dia. bars. Excl. agency. Reply to—A. Ziat, Etablissements David Anidjar, 80, Ave. Lalla Yacoute, Casablanca. Tel. 26-49-25; telex 21.933; cable Danidjar Casablanca.

Metal stampings

3462941—AUSTRALIA—Stud link chain for use on oil drilling rigs & marine moorings in sizes up to 3 in. dia. Estab. 1890, subsidiary of H. H. P., Australia's largest co., operates throughout Australia. Reply to —D. J. Henderson, Mgr., Bullivants Australian Co., Pty., Ltd., 62 O'Riordan St., Alexandria, N.S.W. 2015. Cable Bulvants; tel. 67 0311. Excl. dist.

Antique, secondhand stores

5931XXX—MOROCCO — Wearing apparel, used, first and second choice including men's, women's & children's items. Seeks exclusive agency. Reply to—Driss el Alami, Etablissements el Alami Driss, 11, rue Ibn Batouta, Casablanca. Tel. 27.74.98.

UNDP Requested To Provide Aid

Ten developing countries and regions have submitted 14 preliminary requests for financial and technological assistance from the United Nations Development Program (UNDP). These requests have not been funded nor have executing agencies been designated to implement them. They are made available to U.S. firms as potential projects on which future bid proposals may be requested, or as indications of the industrial and social plans of the requesting countries. U.S. firms are cautioned that these projects may not be approved for technical and/or other reasons.

Interested U.S. firms may obtain individual summaries of these projects from the Export Information Reference Room, Office of Export Development, Rm. 1063, Attn.: Betty W. Patrick, U.S. Department of Commerce, Washington, D.C. 20230. Please include a pre-addressed label with your request, and identify each project summary desired by number, country, and title. If the booklet, *UNDP Guide to Firms and Organizations*, would be useful, please so indicate.

BRA/74/004—BRAZIL—Centre for Aeronautical Improvement. Sao Jose Campos.

CMR/72/023—CAMEROON — University centre for health sciences.

CHI/73/012—CHILE—Mineral and Metallurgical Research Centre.

ECU/73/011—ECUADOR — Detailed investigation of selected mineral products.

ECU/74/009—ECUADOR — Rural development, employment and peasant organization

IND/74/004—INDIA — Expansion of the Documentation Centre (Library and Information Bureau) Central Water and Power Commission, New Delhi.

IND/74/071—INDIA—Expansion of research facilities at the Cancer Research Institute, Tata Memorial Centre, Bombay.

IND/74/072—INDIA — Establishment of super voltage radio-therapy treatment at the Tata Memorial Hospital, Bombay.

JOR/73/011—JORDAN — Assistance to the Lands and Survey Department.

TRI/74/005—TRINIDAD & TOBAGO—Animal health assistants curiculum development.

TUR/73/005—TURKEY—National industrial training project.

TUR/74/006—TURKEY — Planning and development of civil aviation infrastructure.

RVN/74/021 — REPUBLIC OF VIETNAM—Poultry development, research and extension.

REM/71/278 — REGIONAL (EUROPE, MED., & MIDDLE EAST)—Gulf fishery survey and development project.

Lesotho Invites Firms To Register For Bidding

Lesotho will be using an IDA credit for procurement of about $1 million worth of furniture and educational equipment. The proposed bid will be in phases during early 1975; opening and closing dates will be announced to registered firms at a later date. Detailed documents will be forwarded to firms selected to submit tenders. The government may grant a margin of preference to suppliers offering goods manufactured in Lesotho. Deliveries must be c.i.f. Maseru.

Firms from World Bank member countries may receive an application for registration from: Training for Self-Reliance Project, P.O. Box 1279, Maseru, Lesotho. Completed forms must be received by that office by Feb. 15.

Future Construction Abroad

POLAND—Polimex-Cekop, a Foreign Trade Organization, wishes to establish contacts with U.S. firms interested in supplying **technology and equipment for a complete activated carbon production plant.** The plant is to produce coal in lumps or briquettes and 50,000 tons of activated carbon annually, 30 percent of which will be in granuated form and 70 percent in powder form. Plant production is preferred to be a continuous, single-stage process in a fluidized reactor, but other methods may be suggested. Specs can be obtained by writing to Stefan Hilkner, or Stefan Staniszewski, POLIMEX-CEKOP, P.O. Box 815, Czackiego 7/9, 00-950, Warsaw, Poland (Telex 814271 POLI PL). Copies of correspondence may be sent to the U.S. Trade Development Center, American Embassy, Warsaw, U.S. Department of State, Washington, D.C. 20520. If requested, the Trade Development Assistance Division, Bureau of East-West Trade. U.S. Department of Commerce, Washington, D.C. 20230, (Attn: P. Verzariu) will assist interested companies in obtaining additional information.

JORDAN—The Jordan Electricity Authority (JEA) is inviting **prequalification for civil works contractors for Hussein Thermal Power Station, Stage II,** addition of one 33 MW steam unit. JEA has applied to World Bank and other international lending agencies for financing. Second stage will consist of constructing a powerhouse building, and foundations for oil tank, transformers, boiler, turbine generator, and all ancillary motor and equipment; also, trenches for mechanical piping and electrical wiring will be required. Civil contractors interested will be required to complete prequalification forms (available from addresses below). After forms are evaluated, a list of qualified contractors will be submitted to major equipment suppliers and erectors. It will be responsibility of major equipment manufacturers to submit prime bid. A list of major equipment manufacturers and suppliers bidding will be issued to qualified civil contractors to allow subcontractural arrangements. Jordan Electricity Authority, P.O. Box 2310, Amman, Attn.; Ali Ensour, Gen. Mgr.; The Kuljian Corp., 3426 Science Center, Philadelphia, Pa. 19104, Attn: E. J. Zebrowski, Project Mgr.

PANAMA—Instituto de Recursos Hidraulicos y Electrificacion (IRHE) has issued Invitation to Bid No. 460-75 for **supplies of transformers, meters, lightning arresters and circuit breakers.** Bid deadline Feb. 28 at Purchasing Dept., IRHE, Poli Bldg., Justo Arosemena Ave. & 27 East St., Panama City. IRHE has received loan from IBRD in various currencies equivalent to $30 million towards foreign cost. All proposals must be made according to laws of Republic of Panama and guidelines for procurements for World Bank loans, as detailed in bid documents. Bid documents as well as all maps, plans, specifications, and proposal forms may be inspected at IRHE's offices in Panama, at Chas. T. Main International, Inc., Prudential Center, Boston, Mass. 02199, at Stone & Webster Overseas Consultants Inc., 90 Broad St., New York, N.Y. 10004, or at Panamanian Embassies. Complete sets of documents may only be obtained directly from offices of IRHE in Panama or from P.O. Box 5285, Panama 5.

INDONESIA—The government has initiated a program of **highway construction and reconstruction** of existing highways totaling some 12,000 km. over next 4-5 years. Applications for prequalification for 8 projects consisting of approximately 637 km. of highway improvements along existing alignments with some minor realignments and including reconstruction and strengthening of bridges will be accepted until March 1, by Directorate General of Highways, Ministry of Public Works and Electric Power, Jalan Pattimura 20, Kebayoran Baru, Jakarta. The initial call for tenders is expected about April 1. OPIC.

HAITI—Firms interested in construction of **Phase II of the Port-au-Prince to Cap Haitien highway** can obtain qualification documents and tenders from Secretary of State for Public Works, Transport and Communications, Port-au-Prince, Haiti, W.I. A deposit of $500 is required. Project includes earthmoving of 700,000 cubic meters of backfill and 300,000 cubic meters of fill; 900,000 cubic meters of pavement reconstruction; drainage works including 3,000 meters of culverts, 1,500 meters of box culverts, and 12,000 cubic meters of breastwalls and construction of 5 reinforced concrete bridges. Deadline for submission of qualification documents and tenders including itemized unit prices is March 31. OPIC.

BOLIVIA—Bolivia is giving high priority to development and improvement of the road system. Consequently, a comprehensive **road construction program** has been started, including a study program to the year 1980. The American Embassy in La Paz has submitted a report on six road construction projects which is available to interested firms from U.S. Department of Commerce, Trade Opportunities Program, Rm. 2321, Washington, D.C. 20230. Tel.: 202-967-2251. OPIC.

EL SALVADOR—The Salvadoran Government through the Comision Ejecutiva Portuaria Autonoma (CEPA), Avda Cuscatlan 317, El Salvador, continues to move forward in plans to build a **new international airport** at Comalpa, to be called the Cuscatlan International Airport. Total cost expected to exceed $40 million. The government has $17.5 million in tied yen loans from the Japanese Government to cover equipment and consulting services, and will provide $3 million from internal funds and hopes that the Central American Bank (CABEI) will assist with the balance and also with financing construction of an access highway from San Salvador to Comalapa, to cost another $20 million. Equipment and consultant engineering services have already been committed to Japanese firms. It is expected that civil works and civil engineering will be called for bidding in mid-1975 and will not be tied to specific suppliers; this represents about 50 percent of total project cost or a maximum of $20 million. OPIC.

VENEZUELA—A sugar mill in Guanare announces that a feasibility study has been completed for a **paper mill** to be erected next to a large sugar mill for production initially of 35,000 metric tons annually of paper utilizing bagasse. Total cost estimated at BS 200 million. Mill will consist of a bagasse pulp plant and one paper machine for production of wrapping papers. Interested companies should write to: Dr. Alejandro Rodriguez, President, Central Azucarera Rio Guanare, Estado Portuguesa, Venezuela.

The Overseas Private Investment Corp. (OPIC) offers political risk insurance to U.S. construction firms planning to submit bids on projects in certain developing countries, identified by the "OPIC" notation at the end of some items. For further information on OPIC's construction insurance program, write Information Officer, Overseas Private Investment Corp., Washington, D.C. 20527. Tel: 202-632-1854.

SWEDEN—The proposed **Malmo International Trade Center** is planned in phases to start in 1975 with site clearance. First phase of construction is scheduled to get under way in 1976, second phase in 1978 and final phase in 1980. Some 25 million Swedish Kronor has been programmed. There will be opportunities for sale of institutional feeding equipment; materials handling equipment; hotel and restaurant equipment and supplies; modern merchandising equipment; EDP equipment (both business & industrial) and specialized building materials. Address inquiries to: Hans Hammarborg, Project Manager & Management Consultant, Malmo Kommustyrelse, Fack, S-200 12 Malmo, Sweden.

KOREA—Chung Ju Dam Multipurpose Project, intended to control flooding along the south Han River, would increase power production and water supply capacity along the main route of the Han River, especially in Seoul-Inchon area. Total costs estimated at $200 million. Foreign exchange costs of $50 million include import of equipment, materials and employment of foreign consultant services. The Republic of Korea Government has not yet secured financing of foreign exchange costs, but has made preliminary contact with U.S. AID for a $600,000 loan to finance feasibility study, which is expected to commence in mid-1975 and be completed by end-1975. Invitations for prequalification for foreign consulting services and tenders for equipment not yet available. Implementing Office: Mr. Kim, Young Hwan, P.E., Asst. Chief, Water Resources Development Div., Water Resources Bureau, Ministry of National Construction, Seoul. OPIC.

NORWAY—Dyno Industrier, a Norwegian multinational conglomerate strong in chemicals and plastics, has announced intention to create its own methanol capacity to assure raw materials supply for its plastics production. The **Dyno Methanol Plant** will be located in Emden. Feedstock will be natural gas from the Phillips Group's Ekofisk field in the North Sea which will be landed in Emden by pipeline. The Norwegian Government has a royalty claim on 10% of the gas landed, and it will be from the government's share that Dyno will obtain its feedstock. Dyno expected to purchase 300 to 400 million cubic meters annually, at price to be negotiated. Initial methanol production expected to amount to 300,000 tons annually, with a later capacity of 600,000 tons planned. Cost estimated at $75 million. Company contact: Erling Finne, Dyno Industrier, Box 779 Tollbugaten 22, Oslo 1, Telex 11279 DYNO N.

KOREA—Hyundai International, Inc., is planning to expand its existing factories, 300 KM from Seoul, for locally manufacturing such industrial machinery as heavy construction equipment, cranes, water chillers, machine tools, textile machines, cement machines, and paper machines. Total project costs estimated at $32 million. Foreign exchange costs of $18 million will be financed through an ADB loan for importation of metalworking equipment, materials and special tools. Estimated date for Hyundai to issue tenders for equipment is mid-March 1975. Implementing office: Mr. Kang, Moon Kook, Asst. Mgr., Project Department, Hyundai International, Inc. 120, Bakdal-Dong, Anyang-SI, Kyunggi-DO, Korea. C.P.O. Box: 1826 Seoul. Telex No.: Hintla K28388, Hintl K27461. Cable Address: "ROKATLAS" Seoul. Tel: 8-4381. OPIC.

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HARTFORD, CONN., 06103, Room 610-B, Federal Office Bldg., 450 Main St. (203) 244-3530.

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PITTSBURGH, 15222, 431 Federal Bldg., 1000 Liberty Ave. (412) 644-2850.

PORTLAND, ORE., 97205, 921 S.W. Washington St., Suite 521, Pittock Block. (503) 221-3001.

RENO, NEV., 89502, 2028 Federal Bldg. 300 Booth St. (702) 784-5203.

RICHMOND, VA., 23240, 8010 Federal Bldg., 400 N. 8th St. (804) 782-2246.

ST. LOUIS, 63105, Chromalloy Bldg., 120 S. Central Ave. (314) 622-4243.

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